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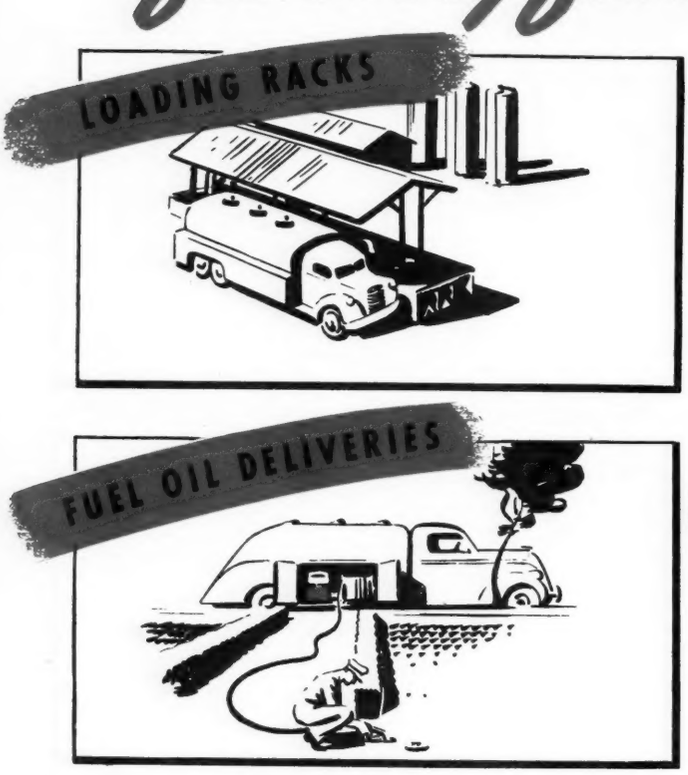
EXACT GALLONAGE MEASUREMENT

for every field of Service



BRODIE METERS

PETROLEUM METERING EXCLUSIVELY

SINCE 1927

In the marketing of petroleum products small errors can readily accumulate into large unaccountable shortages and losses. To keep gallonages in constant check requires the consistently accurate measurement and recordings of Brodie positive displacement Meters. Designed for every field of petroleum service Brodie Meters are available in a range of sizes to fit your every need. There's no meter like a Brodie Meter for dependably accurate service. Write today for full details, stating your requirements.

RALPH N. BRODIE CO., INC., *953 61st ST., OAKLAND 8, CALIF. Division Offices: CHRYSLER BLDG., NEW YORK CITY·59 E. VAN BUREN, CHICAGO 5·302 SOUTH PEARL ST., DALLAS 1, TEXAS 164 JACKSON, SEATTLE 4, WASH. · 2101 S. SAN PEDRO, LOS ANGELES 11, CALIFORNIA.*

VOL. 4 NO. 7

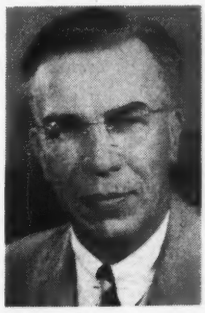
fueloil & oil heat

NOVEMBER

1945

Names in the News

T. A. Crawford has been named general manager of the Timken Silent Automatic Division of The Timken Detroit Axle Co., Detroit, according to an announcement by Walter F. Rockwell, president. Mr. Crawford joined the company in 1926 as a retail salesman, advancing to crew manager, branch manager, advertising and sales promotion manager at the factory, and in 1936 he was made general sales manager. He is one of the founders and a director of Indoor Climate Institute, and recently was elected president of ICI.



Minor T. Dow, former Liaison specialist between Airtemp's Dayton plant and the war agencies in Washington, has been appointed manager of sales training by Ralph C. Cameron, Airtemp merchandising manager. Mr. Dow formerly was assistant service manager, and was with Frigidaire before joining Airtemp in 1936. Mr. Cameron also has announced the addition of *W. C. Bartels,* formerly with Cutler-Hammer, to the company merchandising staff.

R. J. (Chief) Bender has been appointed assistant to C. M. Larson, chief consulting engineer for Sinclair Refining Co., New York. He has just been released by the Navy after two and a half years. Until the war he served as engineer in charge of fueloil sales at Chicago, and was well known as the publisher of "The Sinclair Firebox," and for his other contributions to the literature on oilburners and diesel engines.

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Pacific Coast Representative: Don Harway

816 West 5th St., Los Angeles 13, Cal. Phone: Mutual 8512

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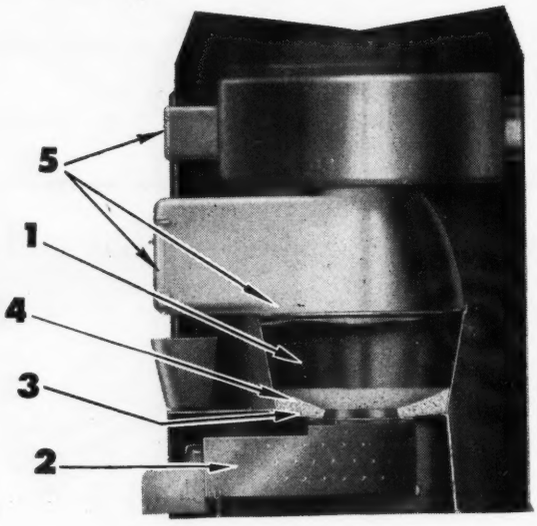
HERE'S THE 3rd REASON WHY... You Can Make More Money as an H. C. Little Dealer

THE SIMPLICITY OF AN *H. C. Little* OIL BURNER SAVES UP TO 40% ON INSTALLATION COSTS



*Just Five Easy Steps in a Typical Installation**

1. All refractory bricking is removed from the sides of the combustion chamber, resulting in greatly improved efficiency.

2. The H. C. Little conversion oil burner is placed in position, supported by three adjustable legs.

3. A metal plate of 24 gauge galvanized iron is installed between the burner ring and the grate support (the grate has been removed.)

4. A plastic refractory hearth two inches thick is built up on the metal plate, to form an air tight baffle and seal between the burner ring and the sides of the furnace.

5. Doors and dampers are sealed with furnace cement to prevent air leakage into the combustion chamber.

All that remains is to connect the oil line and electrical connections (on automatic burners) and the unit is ready to operate.

The great reduction in installation costs made possible by the patented H. C. Little oil burner is just one of eight important competitive advantages which will enable you to make more money as an H. C. Little dealer.

* Note: To assure maximum operating efficiency in each installation, we recommend close adherence to the installation instructions which are included with every H. C. Little unit.

(This is Advertisement #3 in a series of Eight)

THESE ARE THE OTHER SEVEN REASONS

- — Exclusive Burner Design
- — Exclusive CI Electric Ignition
- — Absence of Service
- — Complete Range of Burner Sizes
- —No Noise, Roar or Pulsation
- — Complete Line of Factory Assembled Units
- — Designed for the BIG Market of Small Homes

WRITE FOR A COPY OF "How to Get Real Profits in Postwar Heating" and learn ALL the reasons why you can make more money as an H. C. Little dealer.

Dept. 11
San Rafael, Calif.

Direct Factory Representatives in Principal Cities

The Greatest Name in Low-Cost Automatic Oil Heat for Small Homes

H. C. Little
BURNER CO.

Paul H. Downing, real estate executive, has been appointed manager of builder sales for Delco Appliance Division, General Motors Corp., Rochester, N. Y., according to M. L. Judd, sales manager. Mr. Downing recently was discharged from the Army Air Forces after two years service with the rank of Lt. Colonel. He will make his headquarters at New York City, and will work with building contractors throughout the country.

J. Gower Chapman has been named sales manager of the Duo-Therm Division of Motor Wheel Corp., Lansing, Mich., by M. F. Cotes, Duo-Therm vice-president. Before the war he was district manager for a group of Mid-Western states, and has been with the company 16 years.

Leland W. Shaw has been named purchasing agent of Harvey-Whipple, Inc., Springfield, Mass., it has been announced by Ray G. Whipple, treasurer and general manager. Mr. Shaw joined the organization October 1, from Westinghouse where he was supervisor of purchasing. He also was supervisor of purchasing for seven years with Massachusetts Mutual Life Insurance Co.

R. J. Schumann has been appointed plant manager of the Airtemp-Indianapolis plant, according to A. R. Fors, vice-president in charge of manufacturing. Mr. Schumann joined Airtemp in 1936 and was named chief estimator and supervisor of time study in 1942.

CONVERSION TO FORCED HOT WATER

SAVES 20%

The owner of this greenhouse says—"Last year, through your advice, we changed the heating system to forced hot water, using B & G equipment. After using this system, I want you to know that it was a real pleasure to operate this winter. Heat was quickly distributed where it was called for and we estimate *a saving of 20% in fuel,* which is very gratifyng in times like this."

Described briefly, this 6760 sq. ft. converted system is divided into five zones, each controlled by a B & G Booster and Flo-Control Valve. All zone circuits are tied in to a common header, to which is connected a large Booster. In the event of motor failure in any zone or combination of zones, this auxiliary Booster can be cut in by opening and closing the proper valves.

A new boiler house was built at grade level and the supply and return mains carried through a trench to the old basement boilerroom and there connected to the system. A B & G Tankless Heater installed at the same time supplies hot service water.

The fuel savings effected by modernization of this system were made during one of the coldest New England winters in 40 years. The installation is of particular interest today, when conservation of fuel is of utmost importance.

Contractor: *W. W. Murphy Company, Springfield, Mass.*

B&G EQUIPMENT USED FOR THIS CONVERSION

- 6—B&G High Delivery Boosters
- 5—B&G Angle Flo-Control Valves
- 3—B&G Compression Tanks
- 1—B&G Simplex Relief Valve
- 20—B&G Automatic Air Vents
- 1—B&G Tankless Heater

SEND FOR THIS HANDBOOK

Complete design and installation data on B & G Forced Hot Water Systems for new or conversion installations.

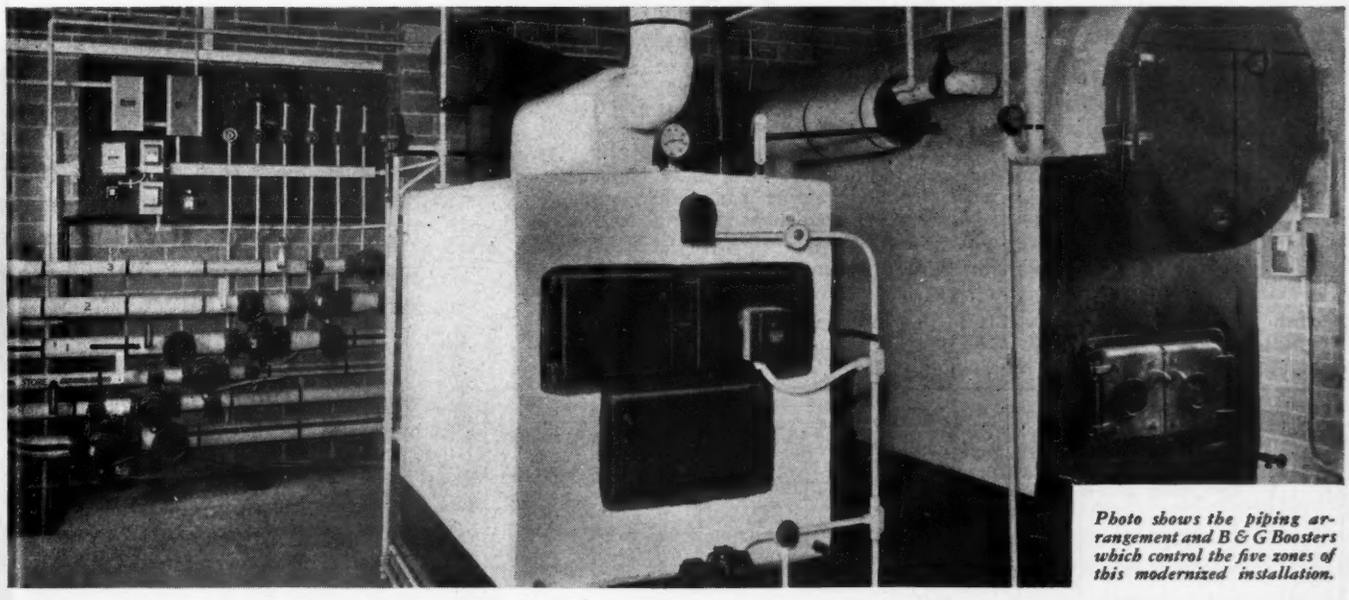


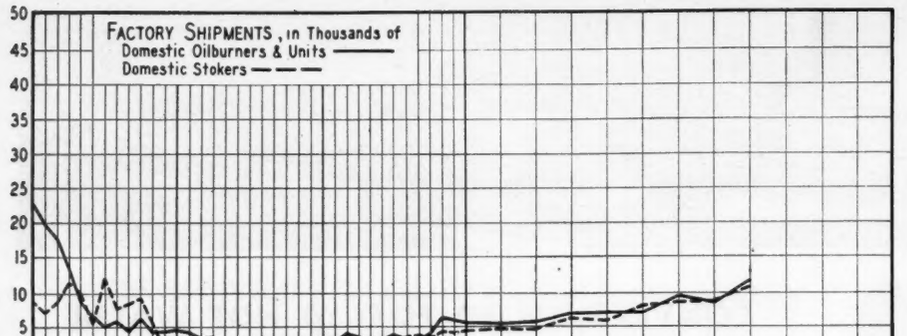
Photo shows the piping arrangement and B & G Boosters which control the five zones of this modernized installation.

Canadian Licensee: S. A. Armstrong Ltd., 115 Dupont St., Toronto

BELL & GOSSETT COMPANY
DEPT. G-7, MORTON GROVE, ILLINOIS

Hydro-Flo HEAT
FORCED HOT WATER HEATING FOR RADIATOR, CONVECTOR, UNIT HEATER AND RADIANT PANEL SYSTEMS

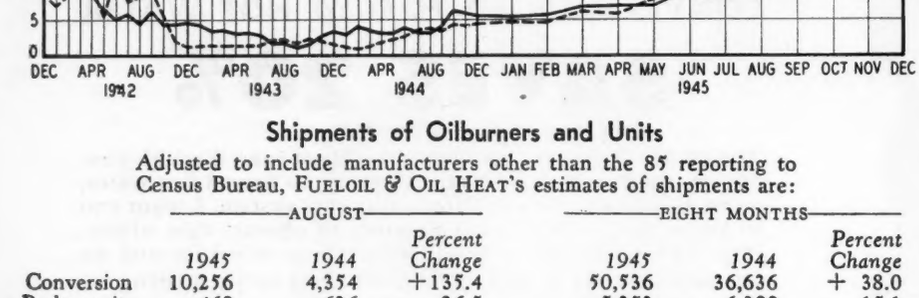
fueloil & oil heat


FACTORY SHIPMENTS, in Thousands of
Domestic Oilburners & Units
Domestic Stokers
DEC APR AUG DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942 1943 1944 1945

Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 85 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	AUGUST			EIGHT MONTHS		
	1945	*1944*	*Percent Change*	*1945*	*1944*	*Percent Change*
Conversion	10,256	4,354	+135.4	50,536	36,636	+ 38.0
Boiler units	460	626	— 26.5	5,353	6,300	— 15.1
Furnace units	861	619	+ 39.1	6,332	5,686	+ 11.3
All domestic	11,577	5,599	+106.8	62,221	48,622	+ 32.1
Commercial	2,741	2,793	— 1.9	24,488	32,115	— 17.5
Total	14,318	8,392	+ 70.7	86,709	80,737	+ 7.4


STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN SEP DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942 1943 1944 1945

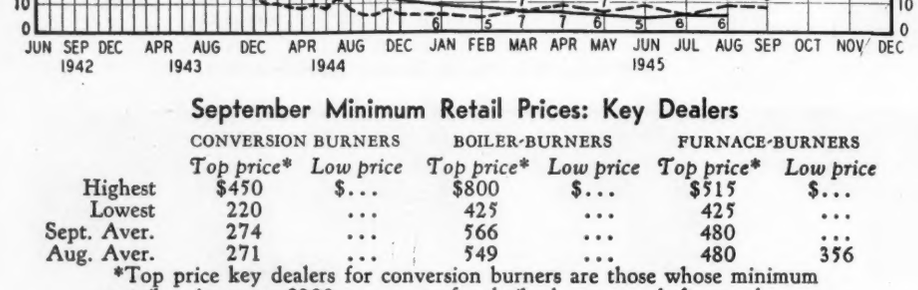
September Minimum Retail Prices: Key Dealers

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$450	$...	$800	$...	$515	$...
Lowest	220	...	425	...	425	...
Sept. Aver.	274	...	566	...	480	...
Aug. Aver.	271	...	549	...	480	356

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more, for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimums are $400 or over.

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
September	119.0	Six months ago	116.1	September	113.9	Six months ago	112.4
August	113.9	Year ago	114.2	August	115.9	Year ago	113.0


INDEX OF BURNER PERMITS in 43 Cities
(Average of 1936-7-8=100)
INDEX OF NEW HOME PERMITS in 35 Cities
(Average of 1936-7-8=100)
Both indexes adjusted for seasonal variation
DEC APR AUG DEC APR AUG DEC APR AUG DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942 1943 1944 1945

Oilheating Trends

INSTALLATIONS OF DOMESTIC oilburners and units in September are estimated at 29,950, or more than eight times the 3,683 installed in the same month of 1944. This installation figure is hard to reconcile in view of the widespread shortage of burners and the scarcity of good installation men, but checking it from three different approaches brings virtually the same answer by each method, so it is about right. The number would not be large for a September in normal times (the highest was September 1940 with 48,959) but it is rather breath-taking after years of looking at small figures.

Note that the figures stated are for installations, not for orders. Orders given dealers for domestic burners and units in September were approximately 59,016, or nearly twice the number installed. Total orders taken in the two-month period, August-September, were 96,616, while installations in the two months were 37,880, leaving a backlog of about 58,736.

Total installations for the first nine months of this year were 73,589 and in the same period of 1944 they were 28,397, or a rise of 160%. September sales were divided: 73% conversion burners; 17% boiler-burner units; 10% furnace-burner units.

BURNER STOCKS: Based upon reports this month from key dealers, the total number of domestic burners and units in dealer stocks on September 30 were approximately 7,610. This is near the irreducible minimum, for it represents less than one burner per dealer, country-wide. Factory stocks at the end of August, the latest available data, were 5,859 burners and units.

SERVICE INCOME: The average reporting dealer had September service department income of $2,443, or virtually the same as in September last year, with the identical dealers averaging $2,394. August income averaged $3,201 and July $2,292. With some dealers there is a shift taking place in the division of income credit to departments. While almost no burner sales were being made, the occasional replacement was considered service department income. Now, with sales opening up, replacements go back to the sales department.

DEALER SALES FORECAST: In last

month's issue were described several dealer angles on burner sales, looking ahead. The one principal question not included was the matter of the time or date at which the reporting key dealers think they can be back to sensible business operation . . . in other words, when do they think they will have ample burners to care for orders, be able to install them promptly and again have salesmen out after business.

The answers this month on that question show a composite or median date of mid-April, 1946. Individual dealers placed the date as early as December 1 this year, and as late as April 1, 1947, but three-fourths of all those answering the question place the date somewhere between March 1 and June 30 of next spring.

GAS INDUSTRY SELLING: With burner dealers swamped trying to handle their own work, it seemed interesting to learn if they are as much aware of gas industry activity as they recently were. Reports from eight principal New England cities show active gas promotion in three of them, none in the others. In four of the cities the utilities have no equipment to make heating installations. In two of the New England cities the dealers expect stiffer competition from gas, looking ahead, than in the past; in the other six they expect no change.

In 14 principal Middle Atlantic cities, dealers in six of them report active gas selling efforts; the utilities in all of the 14 cities are said to be out of equipment to install; in 12 of the 14 the oilheating dealers are convinced that they face a harder gas fight than they had prewar. Reports from seven large Midwest cities disclose that in three of them gas selling drives are under way; in six of the seven cities the gas utilities are said to be out of heating equipment; in five of the seven cities the oilheating dealers expect more trouble from gas competition than previously. In three large Pacific Northwest cities checked, none are reported as having active gas heat promotion campaigns; utilities in two of the three have no gas heating equipment on hand, and oilheating dealers in those cities expect future gas competition to be less active than in the past.

FUELOIL MARGINS: The adequacy or inadequacy of distributor margins on heating oil is temporarily spotlighted by the expiration of the 3 mills for rationing on October 31 and the attempts being made to get a rise in retail ceilings to offset this shrinkage. Country-wide, there has been more collective cost digging during the past month than in many a day, with the intent of learning for OPA whether or not relief is needed. Interestingly, not all dealers report a need for the relief.

Reports from Eastern distributors (combined New England and Middle Atlantic) disclose the following basic factors: 58% of those heard from say that their local groups have prepared cost figures for submission and that in every case the presentation will substantiate the need for the 3 mill margin relief. On the other hand, when asked if their individual company operating statements indicated a need for this 3 mills in order to equal 1941 rate of net profit, 82% of this Eastern group say they must have it; 18% do not need it.

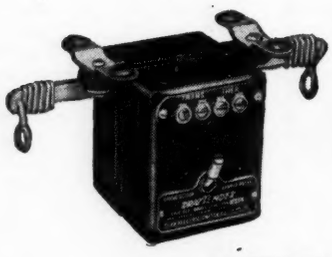
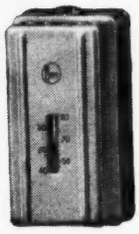
Western reports (combined Midwest and Pacific Northwest) show: just half of distributors say that their local groups are making or have made the cost studies; where the studies were made, two-thirds of them conclude that relief is necessary, with the remaining third not sure it is. On the question of individual company

(Continued on page 98)

Oilburner* and Building Permits

	OILBURNERS					DWELLINGS			
	September		9 MONTHS			September		9 MONTHS	
	1945	1944	1945	1944		1945	1944	1945	1944
	..	..	..	..	Baltimore, Maryland	57	16	115	101
	..	..	..	..	Binghamton, New York	10	0	30	1
	..	..	..	..	Boston, Massachusetts	6	0	17	0
	54	15	183	84	Bridgeport, Conn.	..	..	..	..
	..	..	..	..	Buffalo, New York	1	0	44	43
	..	..	..	..	Des Moines, Iowa	27	0	55	11
	46	12	..	152	Detroit, Michigan	248	154	2045	2366
	43	5	74	17	Elizabeth, N. J.	..	..	..	..
	43	2	84	38	Freeport, New York	..	..	..	..
	..	..	..	..	Greenwich, Conn.	2	1	15	2
	..	..	..	..	Hackensack, N. J.	1	0	62	0
	55	0	277	45	Hartford, Conn.	..	..	..	..
	29	3	56	4	Irvington, N. J.	0	4	2	8
	..	..	..	..	Lynn, Massachusetts	1	1	3	1
	53	5	90	25	Milwaukee, Wisc.	70	56	..	176
	421	28	543	135	Minneapolis, Minn.	97	39	491	42
	22	1	46	19	Montclair, N. J.	..	..	..	..
	..	..	..	..	Morristown, N. J.	0	0	1	0
	38	10	118	73	Mt. Vernon, New York	..	..	..	..
	34	4	216	93	New Bedford, Mass.	..	..	..	..
	39	3	78	12	New Haven, Conn.	..	..	..	..
	0	0	0	2	New Orleans, La.	..	..	..	..
	14	2	88	10	New Rochelle, N. Y.	5	0	5	1
	183	40	..	188	Manhattan, Bronx, Rchd	..	..	..	..
	29	3	..	17	Norfolk, Virginia	13	0	52	6
	0	0	2	1	Oakland, Calif.	..	..	..	..
	32	27	105	120	Omaha, Nebraska	23	19	220	336
	18	0	33	0	Orange, New Jersey	1	0	1	0
	15	..	..	..	Passaic, New Jersey	..	..	..	..
	45	8	116	23	Paterson, N. J.	1	0	2	2
	..	..	..	..	Plainfield, N. J.	1	0	15	7
	65	1	133	15	Portland, Maine	2	0	3	2
	470	19	826	130	Portland, Oregon	62	14	392	417
	19	5	90	..	Providence, R. I.	5	0	13	1
	..	..	..	..	Reading, Penna.	1	0	11	0
	6	0	13	0	Richmond, Virginia	38	1	454	192
	12	0	20	0	Rochester, N. Y.	..	..	..	..
	13	5	46	27	Rockville Center, N. Y.	0	0	0	0
	8	1	29	5	Salem, Massachusetts	2	0	2	0
	25	3	96	42	St. Louis, Missouri	13	0	13	0
	74	9	168	56	St. Paul, Minnesota	88	25	382	26
	7	..	..	..	Seattle, Washington	154	73	1126	942
	..	..	..	..	Springfield, Mass.	67	2	173	13
	..	..	..	..	Syracuse, New York	2	0	86	21
	..	..	..	..	Trenton, New Jersey	1	1	4	8
	..	..	..	..	Utica, New York	1	0	6	30
	65	22	207	115	Washington, D. C.	..	..	..	..
	..	..	..	..	West Orange, N. J.	3	0	..	0
	45	8	107	43	White Plains, N. Y.	1	0	3	0
	30	1	59	13	Wilmington, Delaware	0	0	0	10
	45	10	178	108	Worcester, Mass.	..	..	..	..
	39	7	..	62	Yonkers, New York	..	..	..	..
	2114	259	3991	1255	*Totals*	1004	406	5843	4589
	+716.0		+217.8		*Percent Change*	+147.0		+27.4	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

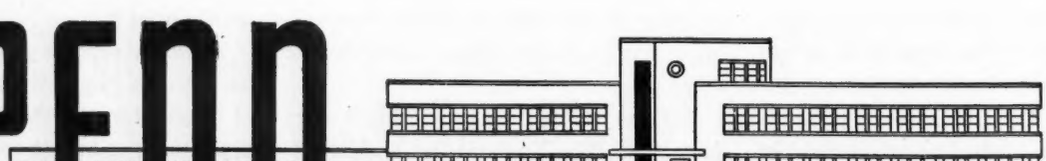
Help your customer save coal with  PENN DRAFTENDER  CONTROLS

It won't be long now before freezing cold weather will have homeowners worrying about their coal supply. For this winter, like the last, is going to see great fuel shortages—and it will be vital that fuel be made to last as long as possible.

By installing Draftender Controls you can help the owners of hand-fired heating plants stretch their coal supplies a lot further. These efficient, low-cost devices eliminate the waste of over-heating common with hand-controlled dampers . . . and assure more efficient heating.

PENN DM-1 Draftender Control sets include, in addition to the damper motor, Temtrol—the heat-anticipating thermostat. They can be installed on any hand-fired system—whether warm air, steam or hot water—and are available *now* —for prompt delivery.

In selling Draftender Controls, you are not only helping your customer to save coal, which the government is urging every citizen to do—*but you are building business for the future.* Once acquainted with thermostatic control, these owners of hand-fired plants will be eager to enjoy the full benefits of completely automatic heating. So order Draftender Control Sets from your local wholesaler today. For further information, write *Penn Electric Switch Co., Goshen, Ind.,* Export Division: 13 E. 40th Street, New York 16, U. S. A. In Canada: Powerlite Devices, Ltd., Toronto, Ont.

PENN 

AUTOMATIC CONTROLS

FOR HEATING, REFRIGERATION, AIR CONDITIONING, ENGINES, PUMPS AND AIR COMPRESSORS

Oilheating Frontier

With 85% of Oilheating in Cities, Small Town Market is Stirring

By
Robert Gray

WARTIME RATIONING has put a yardstick on some oilheating factors that heretofore had been more or less matters of conjecture. We have always known, for example, that oilheating is primarily an urban facility, that it was not too popular in small cities and towns, but we didn't know how unpopular it was.

When an individual oilburner manufacturer found his orders from the smaller places rather lean, he blessed the larger cities and shrugged off the smaller ones to his competitors, for what they might be worth.

Now we learn that only 15% of all oilheating installations are in towns or small cities of less than 50,000 population, while reference to 1940 Census figures will show that 67½% of our population is in those smaller places. Thus, 32½% of our population, in larger cities, has 85% of oilheating, while 67½% in smaller communities has only 15% of the nation's oilburners.

So it is no longer a question of one manufacturer relegating the smaller places to competitors . . . that's what they've all done until we have reached the point where the non-city areas of the country offer to the industry a virtually virgin frontier, which might be especially enticing to sales managers who like new ventures, who enjoy pioneering.

There are reasons to believe that homeowners on Elm Street, Smithville, are becoming better oilheating prospects than before the war, and that active cultivation of smaller places could be fruitful.

In large cities throughout the northern half of the country we have reached about 40% saturation in oilheating among the income levels that have been considered oilheating prospects. This figure is modified somewhat by the discovery this summer in the consumer interview survey that lower income families are planning to get oilheating in numbers greater than expected.

However, even after making an allowance for this factor the industry has reached at least a third saturation in large cities. In small cities and towns the degree of saturation is too inconsequential to measure.

The reasons for lack of oilheating popularity in small places are fairly well known, but it is a good idea to bring them out into the open before we consider what might be done to overcome the objections.

"Just a Lot of Grief"

In the latter part of August a division manager for the Standard Oil Co. of Ohio, living in a small down-state city of about 35,000 population, decided that he wanted an oilburner for his home. He called the first heating contractor that came to his mind, told him his name and address, but not his business connection, explained that he wanted to buy an oilburner and that he would like to have a man sent to his house to figure out the deal. To his considerable surprise, the contractor said, "Aw, you don't want an oilburner, they have never been very satisfactory and you would just be buying for yourself a lot of grief. They have a way of breaking down on cold nights when you can't get service, and in general they are a first-class headache. Put in a modern coal heating plant, it's easy to handle and you'll never have any trouble."

The oil man thanked him for his advice and decided to look elsewhere. One after another he called ten more heating contractors, mostly furnace dealers, in his city and in a couple of nearby towns, and on each call he got exactly the same line of argument against oilheating.

It has been fairly well known that the small-town heating dealer, with notable exceptions, is not enthusiastic about recommending oilheating. It has not been too clear just why this was so. On a recent Midwest trip, the author had occasion to discuss this attitude with a small-town heating contractor in Michigan, Charles A. Delano of Ypsilanti. Delano is one of the exceptions, for he does believe in oilheating and for a number of years has put up a battle to popularize it in his town, without too much success.

Delano is a general heating contractor selling both boiler and warm-air types and selling both stokers and oilburners for automatic firing. He is especially alert to new techniques as shown by the fact that he has done three jobs of panel or radiant heating in residences. Ypsilanti is a town of about 15,000. Delano is the principal heating contractor in the town. A believer in oilheating for many years and a fairly aggressive merchandiser, his organization has never been able to sell more than 38 oil installations in a year . . . this peak was reached in 1940.

In questioning Delano as to why heating contractors generally in the smaller places were at best passive toward oilheating, he pointed out that this is largely a reflection of what they believe to be a public attitude.

Early Adventurers

In the earliest days of the industry, the early 1920's, an occasional venturesome soul in the small town put in oilheating. He had been to some large city, had heard the subject discussed, made investigations and was satisfied that he wanted it. Delano points out that many of these earliest jobs were not satisfactory from a mechanical standpoint and particularly so from a service standpoint. The installation of the early burners, usually by inexperienced heating men, was often anything but exact and then when some mechanical difficulty resulted or developed there was no first-class service man available to correct it.

Delano recalls in the 1920's before safety controls were fully developed it was not particularly unusual to have puff-backs or explosions with oilheating and also he recalls instances where gas pilots went out and, lacking a modern stack switch, the oil pump kept going until it had filled the combustion chamber and a stream of oil ran from the heating plant down the cellar drain.

Don't Think Alike

The question naturally arises as to whether these difficulties were confined to small towns. Of course they were not, but there is a strong psychological difference between big and small places. Thinking of Ypsilanti as a group of 15,000 people, you might compare it to another group of 15,000 people that would occupy a few square blocks in a large city. The big difference would be that in the small town nearly everyone of those people would know all that happened to every other one. In the city, however, almost none of them would know what was happening to any other one.

Thus, oilburner troubles in the early days in cities were scarcely known outside of the home where they occurred, while in the small place they were known all over town. Small-town people remembered and talked about early oilburner troubles, and the average heating dealer did not want to stick his neck out by recommending burners, particularly since he would not have enough oilheating users to justify the cost of maintaining one good service man.

The service angle is probably the most important one in considering small town oilheating. It takes about 300 customers to support at reasonable charges one top-notch burner service man. Almost no small-town heating dealer has this many oilheating customers, unless he has been the exceptional dealer who has fought for oilheating against small-town prejudice. Until this service problem is solved, the industry cannot hope to get far in small towns. There are, however, today indications that the solution is not so far off. Thinking particularly of the Middlewest where small towns appear to offer better oilheating possibilities than large cities, there is a new circumstance that brings at least food for thought.

Special Midwest Problem

The Midwest is the home of the typical small-town gasoline jobber. He has a track-side bulk station, and he supplies gasoline to filling stations in the community and operates route trucks for farm business. For the next few years, gasoline volume is going to be somewhat below prewar volume for the obvious reason that there are less cars on the road. With about 29 million passenger automobiles in 1941 the number by the end of this year will be no more than 24 million. Of those, nearly 10 million are old enough that before the war they would have been junked at that age. These old cars cannot begin to use the normal average of 760 gallons.

The gasoline jobber is beginning to give thought to what he might do to build some fueloil business to replace his gasoline shrinkage. In the past these jobbers have always sold a little fueloil, principally taking care of the small demand that was forced on them.

This man may be the key to the burner service problem. If the small-town oil company would provide good burner installation and service facilities, it should be able to interest heating dealers in taking a more favorable position on oilheating, to the point of advocating it.

If several heating men would advocate oilheating it would not take too long to get the necessary 300 users in the area, to support a good service department. The oil man is the one best able to temporarily subsidize a service department, for he has long range oil profits to count on.

Seasonal Balance

There are other distinct advantages to the small town gasoline jobber in going after fueloil gallonage by encouraging or selling oilheating equipment. Fueloil complements gasoline in leveling out seasonal peaks and valleys.

Upon asking a Midwest oil group where he might find a small town gasoline jobber who had made a success of oilheating and fueloil, the author was steered to John Stevens of Genoa, Ohio, a town of 1,800 population in the Northwest section of the state.

After learning something of the oil business while working for Sun Oil at its Toledo refinery and down in Texas, Stevens started his own gasoline jobbing business in the late 1920's.

It was about 1932 when he started to get a little fueloil business, at first given him without effort. Then he began to recognize the seasonal factor in fueloil gallonage, and he cast about for ways to get more. Sensing that the chief deterrent to oilheating progress in small places was inadequate burner service, Stevens put in a good burner service man, and went after heating dealers to get them to install more burners. At first his service was free; it continued that way up until shortly before the war.

By 1936 Stevens believed that heating dealers could not build his gallonage volume as fast as he wanted, so he started selling burners through his own organization, while still continuing to install and service for other dealers as long as he got the oil business.

As of today, Stevens' total figures would not be impressive stacked alongside a big city operation, but they are so much better than most small town operations that they are worth studying.

Recall that the town has only 1,800 people and from that nucleus Stevens works in a 20-mile radius out from town and gets into several other towns of similar size.

He has 400 central heating customers and 900 space heater customers. Total fueloil sales this year will be about one and one-half million gallons, while his gasoline volume will be about two and one-half million gallons. With gasoline falling off sharply in winter, compared to summer, fueloil just about levels the sales curve throughout the 12 months.

Uses Separate Trucks

Curiously, Stevens does not find some of the advantages that would be expected from this coal-and-ice type operation. For example, he does not use the same trucks for gasoline and fueloil, except on some farm routes. He has four exclusive fueloil trucks, never puts gasoline in them. He explains that attempting a combination truck hurts delivery efficiency on both fueloil and gasoline. Moreover, the clean-

ing operation in the truck tanks to switch from one product to the other takes a lot of time, with the result that the boys are inclined to skip it, and unsatisfactory product results.

Balances Manpower

While not using the same trucks, Stevens can use the same drivers for both products, and equally important, all of the employees in the office and bulk plant are kept uniformly busy the year around. When gasoline was the only product, winter seasons were very unsatisfactory . . . having to lay off truck drivers and some of the office and yard employees, or still worse, keeping them around, half-busy, and everyone feeling unsettled about it. Fueloil business cleared up the whole picture.

Of the 400 central heating oil customers served by Stevens, half of them have burners sold by Stevens since 1936. Selling 200 burners in six years is not an impressive figure to a burner sales manager, but it represents success in the small-town market. The company's service department is today profitable, but even when it was on a free basis Stevens is convinced it paid, for it was the step that got him into oilheating and his present satisfactory balanced operation. In the free-service years his net out-of-pocket cost was about $3,000 a year, with some part of the first cost offset by profits on parts and accessories, but he feels that this was not a high price to pay for what he now has.

In the Midwest there are signs of an awakening interest in oilheating in small places. The old prejudices have been gradually wearing down and have about disappeared. The war accelerated this, with oil and oilheating getting so much publicity. No doubt the prejudice would have died much sooner if the industry had been getting any real promotion in the small places.

Getting back to Delano, the Ypsilanti heating contractor—he is convinced that oilheating is due for a big upsurge in towns when and if the service bugaboo is licked. His biggest year's sales were 38 burners. Since the Japs folded at mid-August there has not been a day but what at least one person has come in or phoned Delano asking how quickly they could get an oilburner—some days as many as ten. All told, he has had more than 200 such requests in two months, and so far he has no burners to sell them.

He attributes this increased interest to, first, the dying out of the old prejudice, and second and much more important, the fact that people have become completely sick of shoveling and messing with coal in any form. He says the war years have crystallized this thinking. He visualizes most of the substantial families in his area quitting coal, and before long.

Gas is available, of course, in nearly all Midwest towns, but is not used in any volume for central heating. The small utilities don't push it, and in the absence of promotion, the general public thinks it too expensive. When small towners leave coal they will go to oil if product and service are adequate. That is why the small town market in the Central States is actually more promising than the big city market, where gas is fairly cheap and backed by strong selling effort.

The oil industry needs the added fuel-oil gallonage at all levels from the retailer up to the refiner, needs it to balance its economy and to offset gasoline shrinkage. The question arises as to whether the local oil man should push after it on a direct basis by selling burners, or whether he should promote sale of equipment through heating dealers, with the oil man making available where necessary good installation and service facilities.

Challenge Heating Men

One thing is fairly certain . . . if the heating man won't push oilheating, the oil man is going even stronger into the heating business, for an important percentage of oil installations include new boilers or furnaces, especially designed for oil.

In larger Eastern markets most independent oil companies sell equipment. The practice will become more common in other parts of the country and other population categories unless old-line heating and furnace men push the sale of more oilheating equipment.

By one method or the other, it begins to look as though the neglected 67½% of our people, who live in places of less than 50,000 population are about to become more important to our industry, and soon.

Stevens Oil Co., *Genoa, Ohio, of which John Stevens is president and principal owner, was a typical Midwest small town gasoline jobber. Concerned over the seasonal factor in selling gasoline only, Stevens investigated ways and means to develop a fueloil business. He started by offering free burner service to encourage heating dealers in the surrounding towns to sell oilburners. They did not move fast enough for him, so he sold burners. He now has one and one-half million gallons of fueloil to two and one-half million gasoline, good seasonal balance.*

"High Rate of Chill"

Cause of Heating Discomfort Pinned Down by Use of New Term

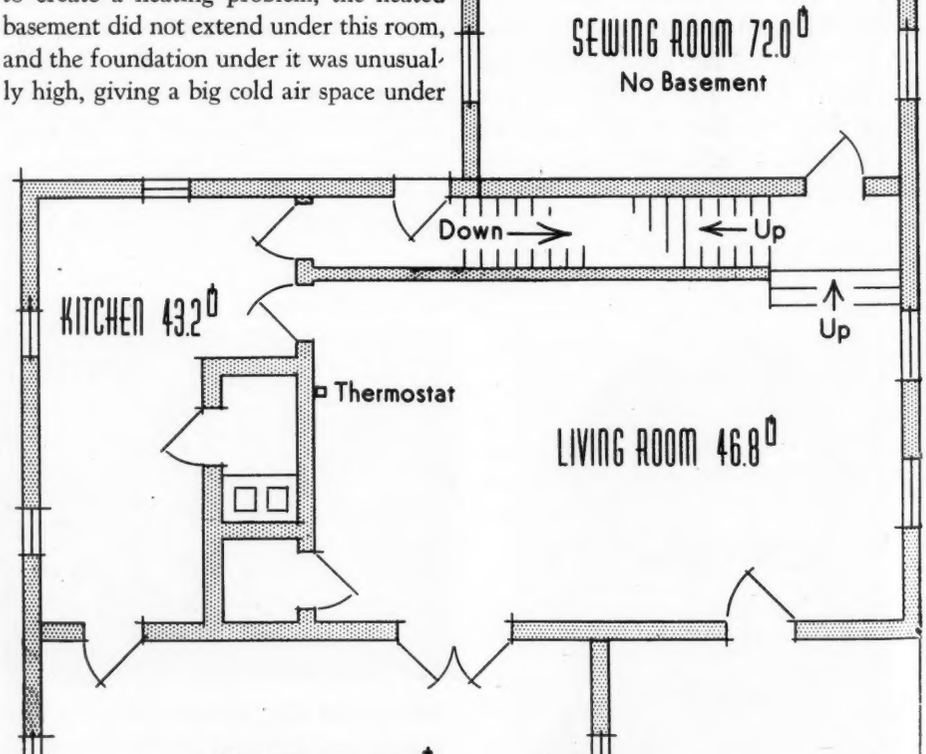
By

J. W. Schulz

OILBURNER PIONEERS had no time for the fine points of heating comfort. They were too busy, back in 1925, trying to arrive at foolproof, dependable burner operation. Since then, oil-firing has turned into oil heating. Today we do not look over a boiler and wonder if our burner could possibly do a good job of firing it; instead, we look over a house and wonder if anything about it could block our efforts to provide the n'th degree of oil heating comfort. Today we worry more than a little when a man who bought a new oil heating plant with all the trimmings declares flatly that heating comfort is the one thing lacking. Our worries multiply when a check-up reveals a sound basis for his complaints.

The term "high rate of chill" was born of such a trouble job. Once we had concocted the term, it obviously applied to dozens of other cases in which seemingly healthy oil heating plants were causing complaints about discomfort, and from then on it was easy to put a finger on an important comfort factor which previously had not been taken into account. We had to go back to burner owners whose earlier complaints about discomfort we had taken lightly (merely because the oil heating plants had been checked over thoroughly and found in excellent condition), for once we had the "high rate of chill" trouble properly labelled we could understand the underlying causes of the complaints. The costs of the correctives for the troubles were not low in every instance, but in every case there was the satisfaction of seeing the real trouble clearly for the first time and being able to outline precisely the steps which would end it.

The accompanying floor plan shows the first floor of the house which, though fitted with an oil heating plant of uncommonly high quality, proved uncomfortable to the occupants. The second floor has two bedrooms and a bathroom and does not come into the problem. The thing that made the owner doubly irate, later when he was finding fault with the oil heating comfort, was that he had recognized the house as difficult to heat, and had taken up the difficulties with various men supposed to be oil heating experts. The most important item, according to the owner as he planned to replace the old heating system, was that the much-used room at the back of the house had never been comfortable with the old coal-fired plant, and one of the big duties of the new oil heating plant was to make this room livable. Termed "sewing room" by the lady of the house, this room was occupied almost every evening, and came closer to being a second living room than a sewing room. Also it served as a spare bedroom for guests, and for the owner himself when he felt like occupying it. The room always had been hard to heat because of its three outside walls, each with a window, and the fact that also it had a "cold ceiling" as no upstairs room was above it. As if that were not enough to create a heating problem, the heated basement did not extend under this room, and the foundation under it was unusually high, giving a big cold air space under the room, since the floor of the room was three steps above the floor of the living room. The dining room at the front of the house also had a "cold ceiling" and also had no heated space under it. Tight foundation walls were under both the sewing room and dining room, however, and when the owner directed heating experts' attention to these rooms, before installing the new oil heating plant, the experts indicated that with plenty of radiation in each room, and a good-sized oil-fired boiler, there would be no problem to heating both of them. The house had no wall or ceiling insulation and no storm windows to begin with (and installing these later, incidentally, did not remedy the troubles about which the owner complained), but heat loss check-ups showed on several occasions that the steam radiators of the oil heating plant certainly were of ample size for each

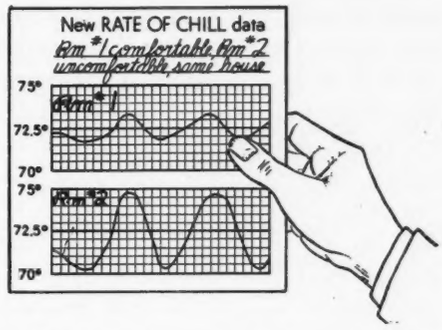


room. The floor plan indicates the amount of radiation installed in each room as part of the new oil heating plant. In spite of its large glass outside door and large French doors to the dining room (a heated room), the living room heat losses are low because this room has little outside wall with only two windows, has a heated basement below it and heated rooms above it. The comparatively small sewing room was fitted with about 50% more radiation than the living room, and the dining room with about 100% more radiation. This in itself indicates that the owner tried to get ample radiation in each of the rooms known to be hard-to-heat. The installer of the oil heating plant, well impressed by the owner with the importance of heating the sewing room to his satisfaction, had tried from the start to locate the room thermostat in this room. The owner refused to permit this as it seemed to him that the clock thermostat should be in the large living room. Besides, the sewing room received heat from the sun on certain days, and then became noticeably warmer than the living room, and the owner wanted to reserve the right to open the windows of this room as far as he liked when he slept in it. Throughout the period of heating discomfort on the installation, the owner refused to permit a thermostat to be installed in the sewing room even temporarily, just to try out the idea.

Before the oil heating plant had gone through half a winter, the owner was raging. In spite of all his precautions to have this room heated properly, the sewing room was, he said, heated "abominably." His complaints reached higher and higher levels for more than a year, while the contractor who had installed the oil heating plant tried every remedy he could think up. As examples of these: new steam main quick vents were installed, then a whole new set of radiator vent valves; the dealer and his servicemen spent hours tuning the adjustable radiator vent valves; the thermostat calibration and differential were adjusted and readjusted again and again until every possible setting had been tried at least once; and the firing rate of the oilburner was raised and lowered again and again.

The owner took the attitude that the equipment dealer and his servicemen were willfully making life miserable for him by refusing to provide "decent heat" for his favorite room. One of the dealer's servicemen refused to go to the house because of the abuse that always awaited him when he answered a service call.

What were the owner's specific complaints? The radiator in the sewing room stayed cold too long and permitted the room to become chilly, he said, and then



suddenly it became altogether too hot and practically drove him out of the room by making it stifling hot. This occurred with 15-minute "on" periods for the oilburner, the shortest the dealer could provide, and with any and all settings of the adjustments on the radiator vent valves. Cutting down the firing rate until the burner could run all day without heating all the radiators and raising steam pressure did not end this complaint.

The owner had other complaints. The sewing room was often chilly on mildly cold days, even with the living room thermostat at 75°. And in mildly cold and severely cold weather, the sewing room chilled too much during the night even with all its windows closed. Two hours after the clock thermostat setting went down automatically, the sewing room was "freezing," even while the living room still was comfortably warm. When he tried to avoid "freezing" as he slept in this room in winter, by leaving the room thermostat set at 70 and keeping the windows closed, the radiators in the room would heat up fiercely several times during the night and wake him up, reported the owner.

Heating Plant OK

The equipment dealer did not blame the trouble on the fact that this was a steam heating plant. He would not do that because he had not indicated before the plant was installed that steam heat would not be good for the house. The complaints did not change his belief, built on his previous experiences, that one-pipe steam heat is satisfactory for inexpensive homes. In fact, because of the "punch" of steam radiation, the dealer had always liked it for hard-to-heat rooms.

"With the burner idle for two or three hours on a chilly day, as it's bound to be according to the natural behavior of oilburners," the dealer reasoned, "when it then runs for 15 or 20 minutes it must give the sewing room a certain shot of heat, and if the room is to get enough from that run of the burner, you can't say that the method of transmitting the heat from the flame to the room has much to do with any resultant difficulties."

Announcement by the owner that in a few months he would have the house completely insulated and every window fitted with a storm window gave the dealer little hope, for although these steps undoubtedly would be good in general and would cut the oil consumption, the dealer could not see that they applied particularly to the problems which vexed the owner most. One other thing bothered the dealer; he felt that the house should be heated properly by a good oil heating plant, even uninsulated and not fitted with storm windows. After all, the radiation for each room was ample, to put it mildly, for the heat losses of the rooms without insulation and storm windows.

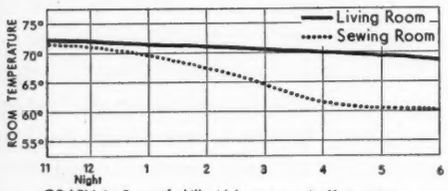
Instruments on the Job

About this time, and fortunately before the house had been improved, the dealer happened to tell me full details about this job which was, as he put it, "going to drive him to drink." We lost no time unloading at the house a carful of instruments, including on-off and room temperature recorders, and minimum-maximum thermometers, as I aimed to get as much data on the house as possible before the insulation and storm windows were installed.

Even a quickly-made investigation showed that the dining room and sewing room heated about the same way. The owner was not complaining about the dining room, it seemed, because the family occupied it only for meals and it was convenient enough to raise the thermostat setting before a meal. The owner's wife kept the French doors between the living room and dining room closed all day, she said, because otherwise when the radiators were cold there was a draft from the dining room into the living room. With no one in the sewing room, she kept

that door closed daytimes for the same reason. The owner himself volunteered the emphatic opinion, at this point, that if the heating plant were "right" there would be no drafts in the living room with the doors to the dining room and sewing room open or closed. All of the temperature check-ups we made later were made with the doors closed.

As we checked over the installation, the firing rate seemed reasonably ad-



GRAPH 1 - Rate of chill with heat turned off at 11 PM

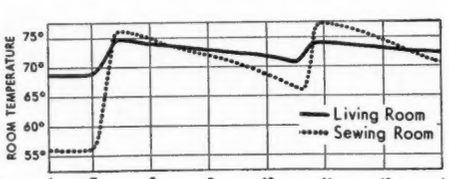
justed. Following a warm start, the oil-burner raised one pound steam pressure, filling all the radiators, in about one hour and one-half. The thermostat usually gave "on" periods of about 20-minutes, which seemed reasonably correct for the installation. The radiator vent-valves were adjusted for good distribution of the steam to the different radiators.

The data on accompanying Graphs 1, 2, and 3 were obtained through using an on-off recorder connected to the burner motor, a temperature recorder and a minimum-maximum thermometer in the center of the living room, and a temperature recorder and a minimum-maximum thermometer in the center of the sewing room. A minimum-maximum thermometer was used also to measure outside temperatures.

Data Analyzed

Graph 1, which we made first, shows that on a given night the sewing room temperature dropped about 12 degrees after the oilburner was turned off at its main switch, while the living room temperature dropped about four degrees. The outside temperature was 38° minimum, 45° maximum while the data for Graph 1 were being collected. A wind was blowing, and naturally it had greater effect on the sewing room.

The data for Graph 2 were collected several days later during colder weather. By six in the morning, the living room temperature, which had been about 76 at midnight, had dropped to 68½, but the temperature of the sewing room had dropped to 56. The first "on" period of the oil burner raised the living room temperature only six degrees (68½ to 74½) but raised the temperature of the sewing room 20 degrees (56 to 76). The living room has a small amount of radiation for its size while the sewing room has a great deal for its size, though naturally the radiation in each room matches its heat loss, and Graph 2 suggests that the radiators are at least approximately of the proper size and that the vent valves in each room are fairly well adjusted. A study of the second cycle, starting at 10:30 A.M. confirms this. Notice that at 10:30, just before the room temperatures began to climb because the burner was taking its second "on" period, the sewing room temperature had dropped to 66 (from a high of 76), while the living room temperature had dropped to 71 (from a high of 74½). While the living room temperature dropped three and one-half degrees (between 7:30 and 10:30 A.M.), the sewing room temperature dropped ten degrees. Bear in mind, in considering this graph, that the living room has "soaked-up" heat in it to the level of 68½ at 6:00



GRAPH 2 - Heat pick-up in morning. Second "on" at 10:30

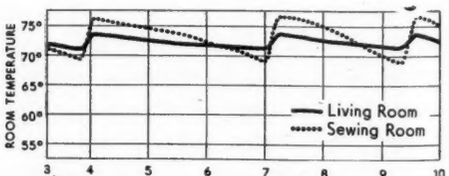
A.M., whereas the sewing room was at 56 at that time. The "flywheel effect" or thermal inertia and momentum of the rooms must be considered, in addition to the "shots" of heat given in short intervals by the radiators. Of course, when at 10:30 the sewing room temperature had dropped as low as 66, to keep the room at an average of about 72 the radiator had to give this room a good "shot" of heat during the next "on" period of the oil-burner.

Graph 3, made with the outside temperature about 40 and a mild sun affecting the sewing room in the afternoon, indicates that the usual temperature difference in the living room is about two and one-half degrees under these conditions, while the usual temperature difference in the sewing room is about seven and one-half degrees. The room thermostat was set for 72½ and the objective was to keep both the living room and sewing room at this temperature. Naturally since the sewing room temperature dropped to 69 before the burner started, during the short time the radiators were heated (remember the oil burner "on" periods are about 20 minutes long), the sewing room temperature had to rise considerably in order to produce an average of about 72½.

Obviously, compared to the living room, which is of construction not widely different than typical construction, the sewing room chills quickly when the oil-burner is idle. Because it chills quickly, with any kind of on-off heating which gives a short "on" period occasionally, there must be a rapid climb in the room temperature if the drop in temperature during the "off" period is to be offset in a way that will result in the desired average temperature.

Applying building insulation and storm windows and making no further changes would not end the trouble in this home for two reasons. First, the charge of heat given to the rooms during an oilburner "on" period would remain the same, therefore the complaint about the sewing room's becoming stifling during each "on" period would not be affected. Second, both the living room and the sewing room would be affected by the insulation and storm windows, resulting in about the same relative difference in the heating (and the chilling) of the two rooms as there was to start out.

The trouble on this installation plainly is related to the "high rate of chill" of the sewing room compared to the living room and to other rooms of typical construction.



GRAPH 3 - Normal mild-weather performance

The steps which were taken to make the sewing room in this house as comfortable as the living room, and the methods used to handle "high rate of chill" troubles on other installations will be outlined in the next article in this series, which will appear in the December issue of FUELOIL & OIL HEAT.

Gravity Warm Air Design

How to Calculate and Lay Out a Simple Heating System

By
S. Konzo*

This is the second of a series of three articles showing the application of the new simplified installation codes developed by the National Warm Air Heating and Air Conditioning Association. Material in this article is based on Textbook Section No. 5, "Gravity Code and Manual for the Design and Installation of Gravity Warm Air Heating Systems." The next article will cover the design of a winter air conditioning system.

YOU CANNOT afford to ignore the gravity warm air heating system, even though you may consider the winter air conditioning system as affording many more applications for oil-burning equipment. In new construction, if the pre-war tendencies towards small houses continues, a large part of the homes will be heated with a simple, and yet adequate system. With existing knowledge of how to properly design and install a gravity plant, such installations will be sweet and simple in every sense of the word. A large part of the post-war heating market will consist, however, of modernization of existing buildings and the conversion of inadequately heated homes to centrally heated dwellings. Every beginner in the heating game should, therefore, become acquainted with the best practices in this time-tested field of application. If you have been out of touch with the developments of the past three years in this game, you should also know what the active committees of the National Warm Air Heating and Air Conditioning Association have to offer you.

Standardized Sizes

Gravity warm air heating has gradually developed during the past thirty years from a practice in which furnaces were judged by the number of pounds of cast iron in the furnace to the present stage in which well defined performances of each part of the system can be stated. We have inspected many old installations in which we have found a total disregard of the basic principles of heating.

One of the most important jobs which we had to tackle was the standardization of ducts, fittings, and registers. The industry has grown just like Topsy. We found that the warm air stacks were being made in depths of 3 in., 3¼ in., and 3½ in. We found also that stack widths were 8 in., 10 in., 12 in., 13 in., and 14 in. In other words, it was possible to purchase on the market fifteen different stack sizes. In addition, leader pipes were being manufactured in diameters of 6 in., 7 in., 8 in., 9 in., 10 in., 12 in., and 14 in. This meant that for a given type of boot design it was possible to obtain as many as fifty different sizes that tied in the leader pipes with the stacks. This was too much.

Mixed Sizes

We have seen, for example, 12 in. leader pipes connected to 8 in. x 3 in. stacks, whereas for full performance the stack should have been almost double that size. We have also noted that many installers seem to think that the leader pipe is the only item that mattered. We have drawn upon the accumulated knowledge of years of testing and have evolved a set of standards that is not only acceptable to the fittings manufacturer, but which is also consistent with test data. Fig. A shows the standard sizes recommended

WARM AIR DUCT SYSTEM
COMBINATION OF PARTS SELECTED AS STANDARD

Part A
FIRST STORY WARM AIR DUCTS

Warm Air Combination No.	Leader Pipe Diameter, Inches	Pipe Area Sq. In.	Register Size, inches			
			a Floor	b Baseboard		
				Size	Extension	Throat Size
1	8	50	8 x 10	10 x 8	2¼	6⅛ x 10
2	9	64	9 x 12	12 x 8	2¼	6⅛ x 12
3	10	78	10 x 12	12 x 9	3¼	7⅛ x 12
4	12	113	12 x 14	13 x 11	5¼	9⅛ x 13
5	14	154	14 x 16	———	——	———

Note—When the calculations indicate a requirement for a given room greater than unit number 4, two or more smaller units totalling the required capacity are recommended.

Part B
SECOND STORY WARM AIR DUCTS, SINGLE WALL STACKS AND FITTINGS

Warm Air Combination No.	Leader Pipe Diameter Inches	Pipe Area Sq. In.	Stack * Size Inches	Register Size, Inches			
				a Floor	b Baseboard		c Sidewall
					Size	Extension	
11	8	50	10 x 3¼	8 x 10	10 x 8	2¼	10 x 8
12	9	64	12 x 3¼	9 x 12	12 x 8	2¼	12 x 8
14	10	78	14 x 3¼	10 x 12	12 x 8	2¼	12 x 8
15	12	113	12 x 5¼	———	12 x 9	3¼	———
16	12	113	14 x 5¼	———	13 x 11	5¼	———

* Recommended stack sizes. This table may also be applied to 3" and 3½" stack depths.

Part C
SECOND STORY WARM AIR DUCTS, DOUBLE WALL STACKS AND FITTINGS

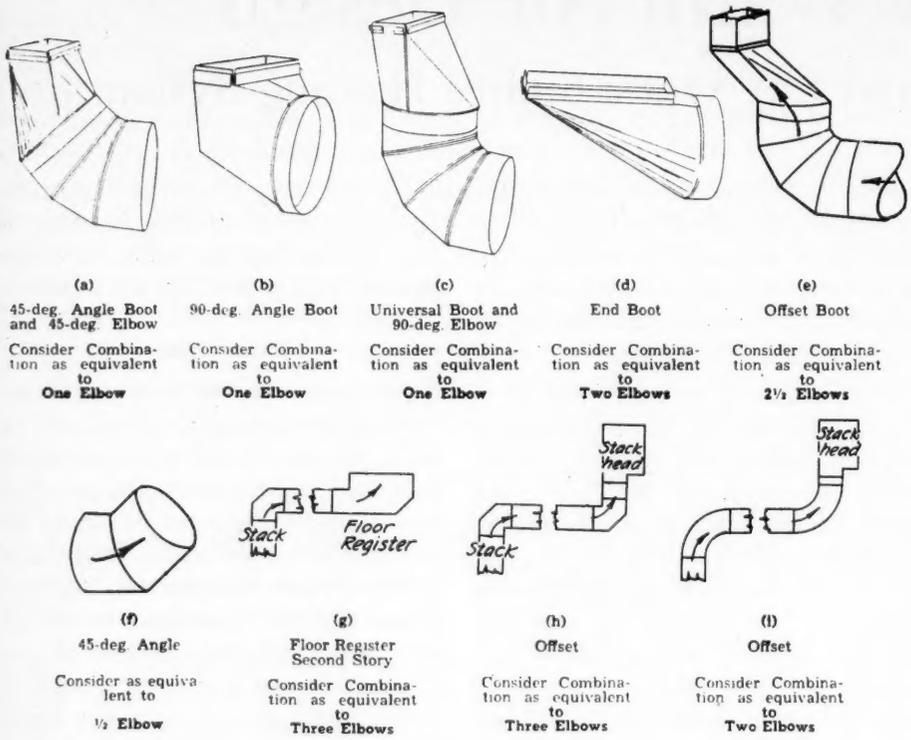
Warm Air Combination No.	Leader Pipe Diameter Inches	Pipe Area Sq. In.	Stack Size, Inches		Register Size, Inches			
			Internal	External	a Floor	b Baseboard		c Sidewall
						Size	Extension	
21	8	50	2½* x 10	3⅛* x 10⅝	8 x 10	10 x 8	2¼	10 x 8
22	8	50	3 x 10	3⅝ x 10⅝	8 x 10	10 x 8	2¼	10 x 8
23	9	64	2½* x 12	3⅛* x 12⅝	9 x 12	12 x 8	2¼	12 x 8
24	9	64	3 x 12	3⅝ x 12⅝	9 x 12	12 x 8	2¼	12 x 8

* Commercial sizes vary ⅛ inch from values shown.

Fig. A

*Special Research Professor of Mechanical Engineering, Engineering Experiment Station, University of Illinois.

TYPICAL WARM AIR BOOTS AND THEIR ELBOW EQUIVALENTS



(a)	(b)	(c)	(d)	(e)
45-deg. Angle Boot and 45-deg. Elbow	90-deg. Angle Boot	Universal Boot and 90-deg. Elbow	End Boot	Offset Boot
Consider Combination as equivalent to **One Elbow**	Consider Combination as equivalent to **One Elbow**	Consider Combination as equivalent to **One Elbow**	Consider Combination as equivalent to **Two Elbows**	Consider Combination as equivalent to **2½ Elbows**

(f)	(g)	(h)	(i)
45-deg. Angle	Floor Register Second Story	Offset	Offset
Consider as equivalent to **½ Elbow**	Consider Combination as equivalent to **Three Elbows**	Consider Combination as equivalent to **Three Elbows**	Consider Combination as equivalent to **Two Elbows**

Fig. B

for the industry. The following items are worthy of study:

(1) We have designated certain combinations by numbers. These combinations tie in the size of the leader pipe with the size of the stack and the register.

(2) Combination number 1, for example, shows that an 8 in. leader pipe to the first story should be connected to an 8 in. x 10 in. floor register or a 10 in. x 8 in. baseboard register having a 2¼ in. extension. In other words, once you have designated the size of the leader pipe, you will automatically specify the size of register.

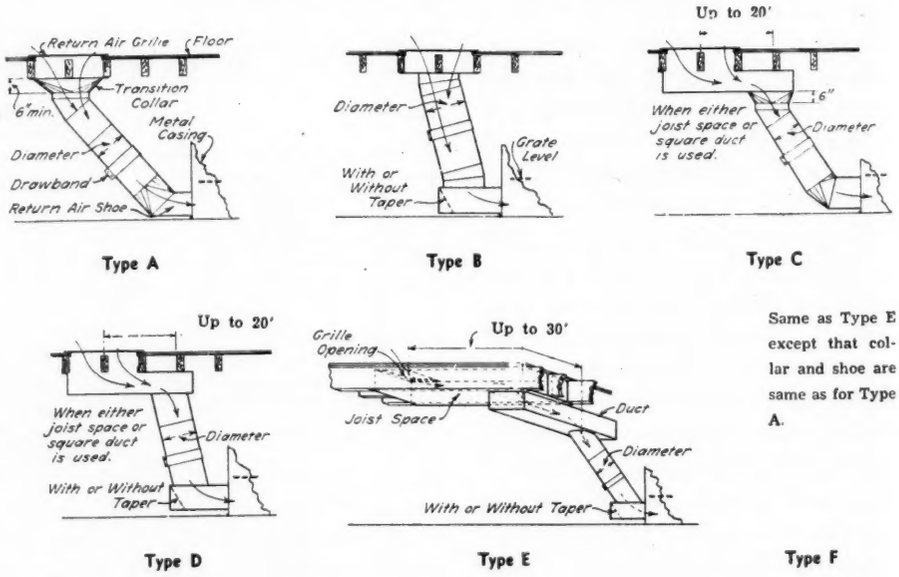
(3) Combination No. 12, for example, shows that a 9 in. leader is attached to a 12 in. x 3¼ in. stack. The floor register for this combination is 9 in. x 12 in. A baseboard or sidewall register would be 12 in. x 8 in. This means that there should be only one size of boot fitting and one size of stack head for this combination.

(4) We have at one fell swoop taken away from the installer any decision on his part as to what stack goes with what leader.

The net result of this standardization has been that we have been able to knock out about 80 per cent of the previously listed catalogue items. This means that there will be fewer number of dies, smaller storage requirements, and lower costs for manufacturers, jobbers, and dealers. It should also result in more satisfactory results at lower cost. If you have not as yet cleaned out your storage bins of nonstandard equipment, we recommend that you examine Fig. A and make the necessary change to conform to these standards. We have the assurance of both fittings and register manufacturers that these sizes will be available and will be given priority as far as cost and shipment are concerned.

We have hopes that this standardization will eliminate one of the most common complaints encountered in poorly installed plants. The bottleneck in a warm air duct most frequently occurs in the stacks. We have so tied in the stack size with the leader size that it should not be possible for a dealer to undersize the stack and still expect the leaders to deliver their rated output.

TYPICAL ARRANGEMENTS OF RETURN-AIR DUCT SYSTEMS



Type A | Type B | Type C

Type D | Type E | Type F

Same as Type E except that collar and shoe are same as for Type A.

Note: For TYPES C, D, E, and F return-air duct systems, reduce the carrying capacities shown in Table 10 by 1 per cent for each 4 feet additional length in the horizontal run.

Table 10

RETURN AIR — CARRYING CAPACITY — B.T.U. SERVICED

Return Air Combination No.	Duct Dia. Inches	Type A B. t. u. per Hour	Types B and C B. t. u. per Hour	Type D B. t. u. per Hour	Type E B. t. u. per Hour	Type F B. t. u. per Hour	Return Air Combination No.
31	10	11,300	9,500	7,800	5,000	7,800	31
32	12	16,300	13,700	11,300	7,200	11,300	32
33	14	22,200	18,700	15,300	9,800	15,300	33
34	16	29,000	24,400	20,000	12,800	20,000	34
35	18	36,700	30,800	25,300	16,200	25,300	35
36	20	45,300	38,000	31,300	20,000	31,300	36
37	22	54,800	46,000	37,800	24,100	37,800	37
38	24	65,200	54,800	45,000	28,700	45,000	38

Fig. D

How Do We Select Combination Numbers?

The process of selecting the proper combination number for a given room is a simple one. The following information is required:

(1) Is the room to be heated on the first or second story?

(2) How long is the leader pipe, measured from the bonnet to the boot?

(3) How many elbows are included in the run? See Fig. B.

(4) What is the Btu heat loss of the room?

When these four items are known, it will be possible to use one of the two capacity tables that have been pre-calculated. A sample table is shown in Fig. C. For example, if a first story room having a heat loss of 6000 Btu's is to be supplied with a leader pipe that is 12 ft. long and contains two elbows, it can be seen from Fig. C that the requirements can be met by combination number 2 which has a capacity of 6520 Btu per hour. By referring to Fig. A it may be noted that this calls for a 9 in. leader and a 12 in. x 8 in. baseboard register.

The use of these tables eliminates any necessity for figuring leader areas or reg-

FIRST STORY REGISTERS
WARM AIR CARRYING CAPACITY — B.T.U. DELIVERED

Warm Air Combination No.	ACTUAL LENGTH (from bonnet to boot) 4' Col. a	6' Col. b	8' Col. c	10' Col. d	12' Col. e	14' Col. f	16' Col. g	18' Col. h	20' Col. i	22' Col. j	24' Col. k	Warm Air Combination No.
	Section A. B. t. u. delivered with ONE ELBOW											
1	6020	5850	5680	5510	5340	5170	5000	4830	4660	4490	4320	1
2	7620	7400	7180	6970	6760	6540	6320	6110	5890	5680	5460	2
3	9400	9140	8870	8600	8340	8070	7810	7540	7270	7010	6740	3
4	13350	12970	12590	12210	11830	11450	11080	10700	10320	9950	9560	4
5	17520	17020	16530	16040	15550	15050	14550	14050	13560	13060	12560	5
	Section B. B. t. u. delivery with TWO ELBOWS											
1	5850	5660	5490	5330	5160	5000	4840	4670	4510	4340	4180	1
2	7360	7150	6940	6730	6520	6320	6110	5910	5700	5500	5290	2
3	9090	8840	8580	8320	8060	7800	7550	7290	7040	6780	6520	3
4	12910	12540	12170	11800	11430	11060	10690	10320	9950	9580	9210	4
5	16940	16450	15990	15500	15040	14550	14080	13600	13120	12650	12150	5
	Section C. B. t. u. delivery with THREE ELBOWS											
1	5620	5460	5310	5150	4990	4830	4670	4510	4350	4190	4030	1
2	7120	6910	6710	6510	6310	6110	5900	5700	5500	5300	5100	2
3	8780	8530	8280	8030	7780	7530	7290	7040	6800	6550	6300	3
4	12450	12100	11750	11400	11050	10700	10350	10000	9650	9300	8950	4
5	16360	15900	15440	14970	14510	14050	13600	13130	12660	12200	11750	5
	Section D. B. t. u. delivery with FOUR ELBOWS											
1	5420	5260	5110	4960	4800	4650	4500	4350	4190	4040	3890	1
2	6860	6660	6460	6270	6080	5890	5690	5500	5300	5110	4910	2
3	8460	8220	7980	7740	7500	7260	7020	6780	6550	6310	6070	3
4	12010	11670	11330	10990	10650	10310	9970	9630	9290	8950	8610	4
5	15770	15320	14880	14420	13990	13540	13100	12650	12200	11750	11310	5
	Section E. B. t. u. delivery with FIVE ELBOWS											
1	5240	5090	4940	4790	4640	4500	4350	4200	4050	3910	3760	1
2	6630	6440	6250	6060	5880	5690	5500	5320	5130	4940	4750	2
3	8180	7950	7720	7490	7260	7030	6800	6560	6330	6100	5860	3
4	11610	11290	10950	10620	10300	9970	9640	9320	8990	8660	8320	4
5	15250	14800	14380	13950	13520	13090	12650	12230	11800	11370	10940	5
	Section F. B. t. u. delivery with SIX ELBOWS											
1	4990	4850	4710	4570	4430	4290	4150	4010	3860	3720	3580	1
2	6320	6140	5960	5780	5610	5430	5240	5070	4890	4710	4530	2
3	7800	7580	7360	7140	6920	6700	6480	6260	6030	5820	5590	3
4	11070	10760	10450	10140	9820	9500	9200	8880	8560	8260	7930	4
5	14540	14120	13710	13310	12900	12500	12070	11650	11250	10840	10430	5
	Section G. B. t. u. delivery with SEVEN ELBOWS											
1	4820	4680	4540	4410	4270	4140	4000	3860	3730	3590	3460	1
2	6100	5920	5740	5580	5410	5230	5060	4890	4710	4540	4370	2
3	7520	7310	7100	6880	6670	6460	6250	6030	5820	5610	5390	3
4	10680	10370	10070	9770	9460	9160	8860	8560	8260	7960	7650	4
5	14000	13610	13220	12830	12440	12040	11640	11240	10850	10450	10050	5

Fig. C

RETURN-AIR DUCT SYSTEM
COMBINATION OF PARTS SELECTED AS STANDARD

Return Air Combination No.	Duct Dia. In.	Duct Area Sq. In.	Area at Shoe Connection, Sq. In.	Metal Grille Sizes Choose one			Baseboard Intake for First Story	When Joist Lining is Used* Number of Joist Spaces Lined and Minimum Depth of Space Required**	When duct is used Choose one	
				a	b	c				
31	10	78			8 x 14	10 x 12		1 space of 7.0" depth	14 x 6	12 x 8
32	12	113		6 x 30	8 x 24	12 x 14	14 x 10 4" Extension	1 space of 9.0" depth or 2 spaces of 5.0" depth	22 x 6	16 x 8
33	14	154	170	8 x 30	10 x 24	14 x 16		1 space of 12.0" depth or 2 spaces of 6.0" depth	28 x 6	22 x 8
34	16	201	220	10 x 30	12 x 24		30 x 10 4" Extension	1 space of 16.0" depth or 2 spaces of 8.0" depth	28 x 8	22 x 10
35	18	254	280	12 x 30	14 x 24			2 spaces of 10.0" depth	36 x 8	28 x 10
36	20	314	340	14 x 30	18 x 24			2 spaces of 12.5" depth	36 x 10	30 x 12
37	22	380	420	18 x 30				2 spaces of 15.0" depth	42 x 10	36 x 12
38	24	452	500	20 x 30				2 spaces of 18.0" depth	42 x 12	36 x 14

* Based on 14" space between joists.
** Use full depth of joist except when joist depth is less than minimum depth required, **when pan must be used.**

Fig. E

ister areas and also takes into account the shortness of the run. It has been demonstrated by Mr. W. D. Redrup of Huntington, Indiana, that by the use of this method it is possible to train an intelligent high school girl to select the necessary equipment and to fill out an order sheet. We consider that this possibility of training a clerk to handle this routine matter as one which should be of interest to many a small heating firm.

How Do We Size the Return-Air Duct?

Of the many poorly installed gravity plants which we have inspected, about one-half of the complaints were directly caused by inadequate returns. The old Standard Code was not specific in showing the reductions in capacity when long tortuous returns were used. These trouble jobs resulted in hot basements, overheated casings, high air temperatures, and reduced life of the furnace. Many home owners have installed conversion oilburning equipment in the hopes that the new burner would automatically correct these conditions. The dealer should recognize that a bottleneck in the return system can only be corrected by streamlining the system.

Fig. D shows six typical arrangements of returns, together with their carrying capacities. For example, if a given return is required to handle a room having a heat loss of 11,000 Btu per hour, the capacity tables at the bottom of Fig. D indicate that any one of the following arrangements can be used:

Type A—Combination No. 31.
Types B and C—Combination No. 32.
Type D—Combination No. 32.
Type E—Combination No. 34.
Type F—Combination No. 32.

It may be observed that the minimum size of the ducts can be obtained only with short, streamlined systems. The standard sizes of ducts and return intakes, that have been selected by the industry are shown in Fig. E.

Although the complete manual gives much additional information the preceding discussion covers the essential features. Your investment of 50 cents will enable you to obtain a copy of Textbook Section No. 5 from the National Warm Air Heating and Air Conditioning Association, 145 Public Square, Cleveland 14, Ohio.

◈

Vocational High Schools Have Oilburner Courses

FIVE TECHNICAL HIGH SCHOOLS of Essex County, N. J., have recently instituted oilburner instruction courses as part of a program of job improvement training for men and women. For oilburner study these would be considered advanced courses only for the reason that they will not accept for enrollment complete novices; rather the training is to improve the work of men already in the industry.

Daytime courses may be entered at any date from Sept. 15 to June 1. Evening classes apparently must be entered at the start of a term. The first term started October 1; the second term starts January 2 and runs to March 16. There are three oilburner courses: basic practices, 30 sessions; oilburner installations, 60 sessions; oilburner service, 40 sessions.

Three of the technical high schools are located in Newark, one in Bloomfield and one in Irvington. Tuition is free to those living in Essex County, and costs only $9.00 per term to those living outside the county.

◈

J. Harold Merrick has been elected a vice-president of Rheem Mfg. Co. He joined the company in 1943 as general attorney.

J. J. Donovan, formerly regional manager for Airtemp at New York, has been made Eastern divisional manager in charge of merchandising in the Boston, New York, Philadelphia regions. Robert Friedel moves up to succeed Mr. Donovan as New York regional manager.

Vaporizing Burner Service

Third Article of a Series to Better Understand These Burners

By
Frank J. Coonan

DO YOU THINK VAPORIZING burners present a particularly difficult situation on service? How would you like to have thousands of these units under service? An able competitor here in Philadelphia has installed 6500 vaporizing water heaters and over 2000 vaporizing furnaces, most of which they still service. That service on these burners presents no insurmountable problem to this concern is attested by the fact that on their vaporizing equipment they average less than 2 service calls per unit per year. Any service organization can closely rival this record, if they will follow the same commonsense rules we have laid down for our service department.

Long ago we realized that as long as original installation defects existed, the best possible service was wasted until these defects were eliminated. We therefore start our point by point check-up on new accounts, with those essentials necessary to good installation. If any such defects are found, we insist that they be remedied, otherwise we refuse the account. If a service organization has been unsuccessful in its vaporizing service efforts in the past, it will have to start at this scratch point, whether or not it installed the equipment it now has under service.

Our point by point installation check-up, together with the reasoning behind each item is as follows:

The Unit Must Be Level

North, South, East and West. The oil in the pot of a unit which is not level, will flow to the low side, creating a pool of oil too thick for proper vaporization, while the high side will of course be dry. This will cause the fire to be one-sided, smoky and cause excessive carbon deposits. The entire base of the pot, with the necessary thin oil film, is needed for good vaporization, which is essential to a clean fire.

The Constant Level Valve (C.L.V.) is also affected by an out of level installation, as the oil level in the control body will not be a true level in relation to the base of the control. The head of oil will be too high on the low side, and too low on the high side, depending on which way the control is out of level. Under such conditions, the operation of the C.L.V. is bound to be erratic.

MINIMUM, MAXIMUM STORAGE TANK HEIGHTS

Control	*Min.*	*Max.*
Automatic Products Co.	12″	6′
Detroit Lubricator Co. .	8″	8′
Lochinvar Corp.	18″	7′

In other words, the outlet on the tank should be not less than the minimum dimension, and the top of the tank should be not more than the maximum dimension, so as to dependably operate the control.

Smoke-Pipe Installation

Vaporizing units should have been installed as close to the chimney as possible to insure sufficient heat at the base of the chimney to produce the best possible draft, when outside weather conditions are not conducive to good draft. If the smoke-pipe is unusually long, it should be insulated with aircell asbestos. This is particularly important for water heaters operating through the summer months. The smoke-pipe should be (a) full size of the unit outlet, with no reductions; (b) slope upward toward the chimney; (c) have as few elbows as possible, 45 degree angles should be used instead; (d) it should not protrude into the chimney unless on a water heater connected to the same flue, with a pressure burner, in which case the smoke-pipe thimble should be installed as shown in Figure 1, which will prevent the pilot from being blown out by the back pressure caused by the starting of the pressure burner. If it is impossible to install a separate pipe, the second choice arrangement is shown in Figure 2.

(e) It should be securely cemented in place to prevent air leakage.

(f) Its location in relation to the nearness of combustibles such as wood joists, wood lath and plastic ceilings, etc., should be in accordance with local regulations.

(g) The draft adjuster must be in good operating condition.

Probably all of the foregoing has been well known to most readers, but if in the past you have paid little or no attention to these so-called minor details, definitely your vaporizing service record has been bad; and if after reading this article you dismiss them as being too much bother, most assuredly your future vaporizing service record will be bad.

Last year we corrected one or more of these defects, on our several hundred vaporizing furnaces. We have never had to break a sheet metal connection, to raise a furnace sufficiently to compensate for an uneven basement floor. There is always enough play in the slips and drive cleats or in the canvas connector to allow for leveling of the furnace.

If the smoke-pipe is to be taken down, either to vacuum clean the unit, or to make necessary changes, always install a short horizontal thimble, cemented solid-

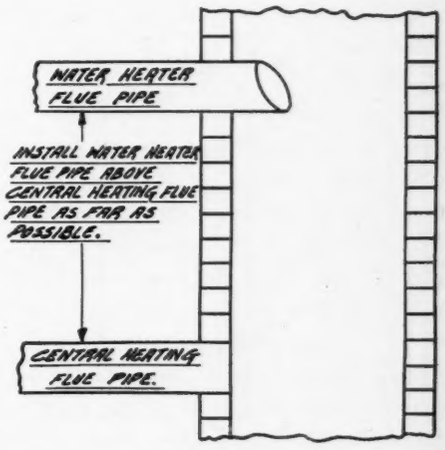

WATER HEATER FLUE PIPE
INSTALL WATER HEATER FLUE PIPE ABOVE CENTRAL HEATING FLUE PIPE AS FAR AS POSSIBLE.
CENTRAL HEATING FLUE PIPE.

FIGURE 1

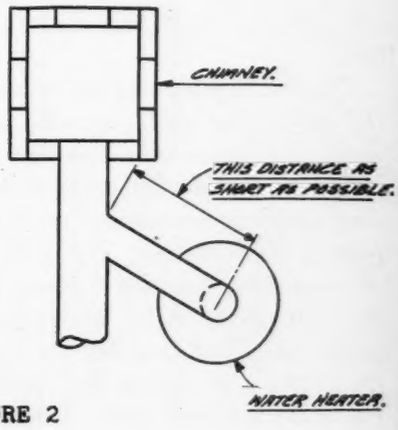


FIGURE 2

ly into the chimney to receive the smoke-pipe. This will eliminate the necessity of recementing, around the chimney, any time in the future that it becomes necessary to take the smoke-pipe down.

With the supposition that all of those items essential to a good installation are as they should be, and that the service personnel has been well schooled in the principles of Constant Level Float Control Valves, we can now proceed with the actual service work.

Inspect the Furnace

Examine the soot deposit on the heating surface. If it is light it can be removed with a soot powder spray gun. If the accumulation is heavy, the unit must be vacuum cleaned.

Check the soot deposit on the inside of the smoke pipe. Often soot in the smoke-pipe will be excessive, even though the heating surface of the unit might be relatively clean. In most vaporizing units, the air for combustion is supplied entirely by natural draft. Hence, it is not only essential that the proper draft intensity be present in the smoke-pipe, but that the entire cross-sectional area of the smoke-pipe be available for the draft intensity.

For example, suppose the draft requirement of a unit was .08″ through an 8″ diameter smoke-pipe, which would have an area of 50.3 square inches. A draft gauge inserted in this smoke-pipe might show that .08″ draft was available, but if the inside of the smoke pipe had a 1-2″ soot deposit, the actual inside diameter through which the gases were traveling would then be 7″, or through an area of 38.5 square inches instead of the 50.3 square inches actually required. Consequently, even though the proper draft intensity was present, because of the reduction in cross-sectional smoke-pipe area, the quantity of air being supplied for combustion would be deficient by almost 24%

This situation becomes a vicious cycle: the smaller the inside diameter of the smoke-pipe becomes, the more smoke will be generated by the fire; the more the fire smokes, the greater becomes the soot deposit in the smoke-pipe. The smoke-pipe of a vaporizing unit must be clean. To do the cleaning job right, take down the smoke-pipe. Most probably the base of the chimney is also in bad condition. Check the flue lining with a mirror. If it is excessively dirty, clean it, or call in someone who specializes in chimney cleaning. Do not attempt to remove heavy accumulations of soot in a chimney by using large quantities of soot powder. The worst you will do is to start a chimney fire; the least you will do is to blow flakey soot over the entire neighborhood, which will not enhance the popularity of oil heat.

Examine the pot. If the pot is removable, take it out and clean it on the floor. Check the conditions of the rings. If they are distorted or partially burned away, replace them. Stainless steel rings oftimes merely warp out of shape, in which case they can be straightened with a hammer. Be sure to reinstall the rings right-side up. On furnaces equipped with stainless steel pots, which are not removable, remove the rings through the inspection door, following the same ring policy as outlined above. Clean the inside of the pot thoroughly with a wire brush. Use a sharpened putty-knife to loosen the hard carbon on the base of the pot. Remove the loosened accumulation from the pot with a vacuum-cleaner and reinstall the rings. Do not use soot powder to clean a stainless steel pot. The excessive heat will warp and twist the burner metal.

On furnaces in which neither the pot nor the rings are removable, cleaning of the pot is best done by first loosening as much carbon as you can with a wire brush, inserted through the inspection door. Remove as much of this loosened carbon as possible with a vacuum-cleaner. The balance can be removed by a "burning out" process. Start a fire in the unit; operate the fire at about one-half capacity, by means of the manual selector knob. Wait until good draft has been established, then remove the lighter plug, and with an L-shaped rod, vigorously scrape the bottom of the burner, particularly in front of the oil inlet. The excess air entering the lighter door, will supply the oxygen, which together with the heat caused by the excess air pulling the flame down to the bottom of the pot, will reduce the remaining carbon to an ash, burning out everything but the non-combustible impurities.

The use of soot powder capsules is permissible on heavily built pots, such as Duo-Therm and Lochinvar. When they are used in conjunction with a "burning out" process, be sure the heating surface above has been cleaned first, otherwise the tremendous heat generated by the soot powder might ignite soot deposits further up in the furnace, which will give both the service man and the customer a few anxious moments.

Make sure the holes supplying air for combustion on all units are open. DO NOT ENLARGE THE HOLES IN A POT. DO NOT DRILL NEW HOLES IN A POT.

The Oil Supply Line

If the job has a line filter, examine the cartridge and replace it, if necessary. If it does not have a line filter, shut off the oil at the tank and place a pan under the CLV., then disconnect the oil line at the C.L.V. Install a goose-necked piece of copper to the end of the oil line, and insert the open end into a can or glass jar. Turn the oil on at the tank, and check the flow into the open vessel. Do not be alarmed if the first bit of oil is badly discolored. This is caused by the high velocity flow of oil flushing out the line.

Allow the oil to flow until the oil runs clean. If the oil refuses to flow, or the flow is very scant, the oil line is badly clogged, and must be blown out. Clogged oil lines have become an important service problem, not only on vaporizing equipment, but also on mechanical equipment with small firing rates, because the low velocity flow of oil through the supply line allows sediment to settle and deposit.

A simple arrangement for cleaning out clogged lines can be made by coupling a small electric motor equipped with an extension cord to an old pressure burner pump. If a fuel unit is used, the pressure regulating mechanism can be removed, and the bypass and return line opening should be plugged. By connecting the pumping unit between the tank and the supply line, and operating the electric motor, a thorough cleansing of the oil line can be done in a few minutes.

Every vaporizing manufacturer's installation manual strongly recommends a line filter at the tank; yet field checks show that 80% of the installations do not have them. To hold service calls to a minimum, the oil line must be clean; and to keep the oil line clean, every vaporizing installation must have a line filter.

Vaporizing units burning a low fire rather than a pilot fire are not usually equipped with cleaner rods. It is the

(*Continued on page 78*)

Adequate Oil Supply Matches Growing Demand, Experts Say

PETROLEUM DEMAND in the United States during the next twenty years will increase more than 40% over the 1941 level, and more than 100% in foreign countries, the O'Mahoney Special Committee of the Senate was told in October, but forecasts also were made of an abundant supply of crude to meet these larger uses. Distillate heating oil demand in this country is expected to average 565,000 barrels a day by 1965, compared with 341,000 barrels a day in 1941.

Stewart P. Coleman, director of the Coordination and Economics Department of the Standard Oil Company (N. J.), testified that a more than adequate supply to meet all demands can be taken for granted, and Dr. Robert E. Wilson, chairman of the board of the Standard Oil Company of Indiana, told the committee of U. S. and world petroleum resources.

"While the petroleum industry has supreme confidence in its ability to meet every demand for petroleum for many, many years," Dr. Wilson said, "it is understandably reluctant to try to forecast definite detailed figures for two or three decades ahead. Seldom, if ever, has our industry been bold enough to forecast for many years ahead the extent of expansion of either the demand for petroleum or the ability of the industry to supply that demand from domestic sources. The unfortunate experience of our sober and highly regarded U. S. Geological Survey makes any group reluctant to undertake projections except with reservations—in 1918 the Survey estimated the total crude reserves underlying the country to be around 6,500,000,000 barrels, and most contemporary geologists were inclined to concur. Actually we have since that time produced 25 billion barrels and today have proven producible reserves of more than 20 billion barrels, a total already seven times that estimated by the Survey."

Warning against too much reliance on the proven reserves, Dr. Wilson asked that the industry be left free to develop on a tried and proven basis, and shun the adoption of measures that would regiment research, destroy the incentives to invention, or prevent the free play of competitive enterprise. "Given a continuation of a legal and economic climate conducive to free competition in discovery, research, development and distribution, the industry knows a dozen ways in which any possible demand can be met, even though it cannot predict just which of these methods will prove most efficient and economically desirable when the time comes," he said.

Though Mr. Coleman's testimony was chiefly concerned with demand, he summed up the Western Hemisphere supply situation: "It is believed that the Western Hemisphere, outside the United States, has sufficient proved and potential reserves of oil to supply the future estimated demand for Western Hemisphere countries other than the United States and in addition to supply any reasonable amounts of petroleum that may be required to supplement the United States' own crude oil production for many years in the future.

"In view of the larger known and potential supplies of petroleum in foreign areas relative to demand," Mr. Coleman continued, "it would seem logical to assume that over a period of time, exports to foreign areas from the United States will decline." These exports for 1938 and estimated for the forecast period were revealed by Mr. Coleman as shown in the table.

U. S. EXPORTS
(Bbls. per day)

1938	530,800
1947	266,000
1950	123,000
1955	58,000
1960	40,000
1965	27,000

The estimated foreign demand in detail, showing a doubling of this demand in the next twenty years, is shown in Table I. The estimates are made for two periods; the short-term future to 1950, and the long-term period from 1951 to 1965 which is grouped into three five-year periods.

United States demand has been broken down by principal products by years, with consideration given probable changes and improvements in methods of use. Though passenger automobiles in use may drop below 24 million before volume production begins, it is expected there will be 40 million cars on the road before 1965. Consumption of gasoline per car is expected to increase to 16 barrels a year by 1949, and then decrease due to improvements in construction and engine design to less than 15 barrels per car by 1965. Aviation gasoline demand is expected to increase from 125,000 barrels a day in 1947 to 200,000 barrels a day in 1965.

Kerosene demand, it is believed, will

Table I—Estimated Demand in Foreign Countries

ESTIMATED DEMAND FOR CRUDE AND PRODUCTS
(42-gal. Barrels Daily)

	1938	1947	% Change 1947 vs. 1938	1950	% Change 1950 vs. 1947	1955	% Change 1955 vs. 1950	1960	% Change 1960 vs. 1955	1965	% Change 1965 vs. 1960
Western Hemisphere, excl. U. S.	487,800	678,100	+39	793,400	+17	803,000	+ 1	904,000	+13	1,005,000	+11
Europe, excl. Russia	930,900	689,300	—26	951,700	+38	1,220,000	+28	1,520,000	+25	1,820,000	+20
Asia	284,500	270,700	— 5	355,800	+31	415,000	+17	485,000	+17	555,000	+14
Africa	127,600	173,600	+36	188,300	+ 8	215,000	+14	260,000	+21	300,000	+15
Oceania	123,800	164,000	+32	182,500	+11	190,000	+ 4	205,000	+ 8	220,000	+ 7
Eastern Hemisphere, excl. Russia	1,466,800	1,297,600	—12	1,678,300	+29	2,040,000	+22	2,470,000	+21	2,895,000	+17
Total Foreign, excl. Russia	1,954,600	1,975,700	+ 1	2,471,700	+25	2,843,000	+15	3,374,000	+19	3,900,000	+16
Russia	562,300	795,700	+42	898,000	+13	1,080,000	+20	1,260,000	+17	1,440,000	+14
Total Foreign	2,516,900	2,771,400	+10	3,369,700	+22	3,923,000	+16	4,634,000	+18	5,340,000	+15

Furnished by the Committee on American Petroleum Interests in Foreign Countries, June 18, 1945.

tend to level off at about 230,000 barrels a day by 1965. Mr. Coleman sees a possible rise in the use of liquified petroleum gas to absorb the increased demand. Besides kerosene for range oil and space heating, the figures include that used for illumination and as tractor fuel.

"Distillate fuels," Mr. Coleman explains, "embraces several products made from crude petroleum which are particularly suitable as fuel for oil burners and for internal combustion engines.

"At present there are in use in the United States more than 2,250,000 home oil burners," he continues. "These normally would consume more than 50 barrels of fuel annually. Projections of the market for home-heating indicate a substantial increase in oil burner installations. The total number of burners in use is expected to reach 4,800,000 during the period 1961-1965. After considering improvements in efficiency of homes and home-heating equipment, consumption is forecast to reach a daily average of approximately 565,000 barrels during the period 1961-1965.

"The most important factor in the demand for the remaining classes of these fuels is the utilization of diesel motors. It is expected that these will show a substantial increase. This, together with other uses, is forecast to average 280,000 barrels daily in the 1961-1965 period. This figure would be about 2-2/3 times the consumption in 1939." Total distillate fueloil demand is estimated at 600,000 barrels a day in 1947, increasing to 845,000 in 1961-1965.

Consumption of heating oils per burner is expected to be down to about 43 barrels per year by 1965, contrasted with an average of 57.8 barrels per burner in 1939.

Residual fueloil demand is not expected to increase as rapidly as the lighter fueloils. Mr. Coleman's forecast shows an increase from 1,055,000 barrels a day in 1941 to 1,240,000 barrels a day in 1965. This allows for a threefold increase in Navy consumption over 1939 levels, and for the industrial and bunker demand which would accompany a high level of industrial activity.

Dr. Wilson, testifying on the effect of catalytic cracking, has this to say about residual oil supply and price: "Heavy fueloil postwar will no longer be a major and inevitable by-product of petroleum refining, forced to find a market in close price competition with coal even in large installations. Its price, therefore, is likely to go up somewhat more rapidly than that of crude. On the other hand, even without larger imports, adequate supplies would undoubtedly be available for ships' bunkers and for moderate sized installations where oil's efficiency, cleanliness, and labor saving are sufficient to justify a reasonable premium over coal."

It is significant that neither of these experts sees any large demand arising from synthetics or chemical industries, about which there has been much speculation in the past. This demand has been lumped into "All Other Products and Losses" which is expected to increase less than 48% over the 1941 level in the next twenty years to 650,000 barrels a day.

"We approach the future in much the same spirit as a well-educated young man about to marry," said Dr. Wilson. "He does not know for whom he will be working or how much he will earn or just what his financial requirements will be, but he has supreme confidence that, given his health, he will be able to make a good living and give adequate support and protection to his family, though at what precise level the balance will be struck he cannot predict. The only important 'if' in his mind is the question of *continued health* and *freedom of opportunity*, and that is exactly the feeling of the petroleum industry as it looks ahead to the future."

Table II—Estimated U. S. Petroleum Demand

(Figures in thousand barrels per day unless otherwise indicated)

	PREWAR		EARLY POSTWAR				LONG-TERM		
	1939	*1941*	*1947*	*1948*	*1949*	*1950*	*1951-55*	*1956-60*	*1961-65*
Motor Fuel (Gasoline)									
Passenger Cars	953	1,146	1,045	1,210	1,315	1,360	1,440	1,550	1,635
Aviation	10	30	125	100	85	100	125	175	200
All Other Uses	559	653	700	730	750	760	725	775	825
TOTAL	1,522	1,829	1,870	2,040	2,150	2,220	2,290	2,500	2,660
Kerosene	166	190	202	206	211	215	215	225	230
Distillate Fuels Oils									
Home-Heating Fuel	265	341	402	448	488	510	538	555	565
Diesel Fuels and all others	105	133	198	195	197	214	240	260	280
TOTAL	370	474	600	643	685	724	778	815	845
Residual Fuel Oil	895	1,055	1,125	1,138	1,147	1,142	1,160	1,200	1,240
Lubricants									
Automotive	34	39	41	43	45	46	48	51	53
Industrial	31	44	44	46	46	46	49	54	57
TOTAL	65	83	85	89	91	92	97	105	110
All Other Products and Losses	355	440	513	534	551	562	570	610	650
Total All Petroleum Products	3,373	4,071	4,395	4,650	4,835	4,955	5,110	5,455	5,735
Memoranda:									
Average Number Passenger Cars in Use	25,036	27,382	25,800	28,000	30,000	31,500	34,000	37,500	40,000
Consumption per Car Barrels/Year	13.9	15.3	14.8	15.7	16.0	15.8	15.4	15.1	14.9
Average Number Oil Burners in Use	1,749	2,243	2,850	3,175	3,475	3,750	4,000	4,400	4,800
Consumption per Burner Barrels/Year	57.8	56.8	51.5	51.4	51.2	49.5	49.0	46.0	43.0
Federal Reserve Board Index of Production	108	162	161	172	175	170	175	188	200
									(High Business Activity)

When great-grandpa built this subdivided union station, hung it full of fret-saw gingerbread, and called it home, he never expected to really heat it. He knew that the "island system" was about the best he could do—create little islands of heat about the house in which the family could huddle—let the teeth chattering drafts rage unchecked elsewhere. Not much of the house could be made comfortable, or used in winter. Great-grandpa substituted grandeur for comfort.

But great-grandson isn't going to have a house like an arena. He is going to have a small, or medium size house—big enough for comfort—but with no delusions of grandeur or efforts at impressiveness.

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Revival of Smoke Control Will Further Expand Oilheating

A BROADENED MARKET for oilheating may result from preparations now being made by many cities for stringent enforcement of smoke control ordinances, which were sidetracked by wartime equipment, fuel and manpower shortages and the need for production at any price. Besides those planning to resume enforcement efforts, many other cities heretofore lacking adequate smoke abatement laws are considering the adoption of such measures.

While large industries can afford the expense of ash-collection devices and other smoke control equipment, there already have been indications from at least two cities that smaller establishments will shift to oilburning equipment as a means of complying with smoke control regulations. Despite the progress of developments in smokeless coal and improved coal-burning furnaces and stoves, it is likely, too, that many residential consumers will turn to oil as efforts are made to apply smoke control regulations to them.

Municipal attempts to attack the smoke and fumes problem through local ordinances were, for the most part, just starting to make progress when halted by wartime conditions. A rapid resumption and spread of this trend is now indicated by developments in virtually all industrial sections of the nation.

War Stopped Campaigns

Typical of the situation in a number of major cities is an anti-smoke campaign now being organized in Cleveland, which in 1939 adopted a strict smoke abatement code but ran into enforcement difficulties when the war made the replacement of obsolete equipment impossible. Because of current coal and manpower problems and the prospect that modern types of smoke abatement devices will not become easily available for another six to 12 months, Cleveland officials recognized that a satisfactory job of smoke control is still a long way off but are going ahead with enforcement plans. Mayor Burke has launched a program to build up a strong enforcement organization which hopes to abolish the clouds of smoke and dirt which now deposit an estimated 50 tons of filth on every square mile of the city each month, causing damage figured to exceed $10,000,000 a year.

Indianapolis, which also adopted a stringent smoke control ordinance shortly before the war, is scheduled to start an enforcement program Jan. 1. Developed by a subcommittee of Mayor Robert H. Tyndall's Postwar Planning Committee, the Indianapolis program places smoke control under a non-political citizens' advisory committee and requires choice of an enforcement staff on a merit basis.

Baltimore is another city planning more effective enforcement of its smoke control rules. City Smoke Abatement Engineer J. H. McKay has announced an appreciable response already to appeals to industrial plants, apartment houses, hospitals and others to obtain equipment for the abatement of smoke and its solids as it becomes available. Considerable interest was evidenced in ash-collection devices, McKay said, but predicted that many smaller establishments would shift to oilburning equipment in preference to acquiring expensive collection equipment.

Louisville has adopted a smoke control ordinance and is now preparing an enforcement program. Wilmington, Del., recently issued a warning that action would be taken against violators of its smoke regulations unless corrective steps were taken. Complaints in Wilmington had been made against laundry and dry cleaning establishments, two of which at this writing had converted to oil, with others planning to follow suit. Columbus, O., is another of the cities in which renewed smoke control interest has been shown.

Both the city of Los Angeles and Los Angeles County have been studying the smoke problem with a view to adopting control laws. Under consideration in Milwaukee was an ordinance to prohibit the discharge of smoke, soot, cinders, noxious gases, fumes or fly ash. A uniform county-wide smoke abatement ordinance, enforced on a county-wide basis, also was suggested as necessary to solution of Milwaukee's problems. More rigid smoke control regulations were proposed in Atlanta by Mayor Hartsfield, with similar interest reported from other cities throughout the country.

A threatened shortage of coal this winter was cited at the recent convention in Columbus, O., of the Smoke Prevention Association as a reason why stringent smoke abatement measures should be taken now. Several speakers emphasized that smoke indicates waste, with one asserting that "fuel conservation and smoke control is the same thing."

How Long Will Oil Price Control Continue?

RECENTLY A NUMBER of industry men have asked for a guess as to how long price controls will be retained on petroleum products. They ask this in view of OPA's announced policy of lifting all control from any particular commodity when it becomes clear that supply is definitely ample to meet demands. There is little question but that this point will be reached in the oil industry considerably earlier than in most for the reason that reconversion was almost instantaneous, and because the industry's largest customer was Government, which has cancelled most commitments.

There is reason to believe, however, that oil price controls will stay on until June 30, 1946. While prices have already been freed on a few inconsequential luxury items, chances are that June will be the earliest date for releasing any of the more basic commodities. Oil products will become plentiful, from all appearances, most any time now. Yet, with the unsettled labor picture, with several refineries closed last month for days, there is a definite element of doubt on supply, and this will not be dispelled until stability returns to the industrial pattern, probably not before winter or spring. There will be hesitancy to free any commodity from price ceilings until everyone in OPA is doubly sure that it's safe.

OPA expires June 30 unless Congress gives it longer life. As the date nears, serious effort can be expected to unload every possible control within reason, to please Congress. Oil will probably go out with that batch.

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Built-in type for modern boilers with 2½ inch tapping

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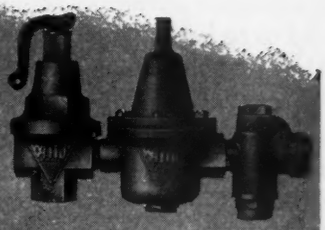

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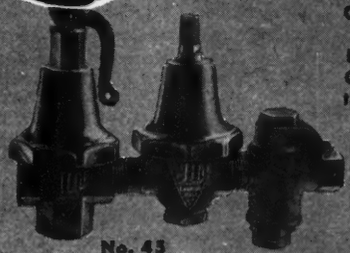

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For indirect heaters. Controls tank water temperature

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OHI Directors Vote Spring Burner Show at Philadelphia

DIRECTORS OF OIL HEAT INSTITUTE, meeting at New York, October 9, voted to hold an oilburner show at Philadelphia, April 23 to 27, inclusive. Chicago was discussed as a possible location for the spring show, but was eliminated from consideration by lack of space for the show and for personnel in the hotels. The directors voted to hold the show from Tuesday night through Saturday in order to take advantage of Saturday consumer attendance which is expected to be heavy. Details are yet to be worked out by the headquarters staff under a committee composed of President W. A. Matheson; W. A. Kemp, chairman of the Accessory Div.; C. R. Jonswold, chairman of the Distribution Div.; Fred Haab, director from Philadelphia, and John A. Morrison, managing director of the Electrical Association of Philadelphia. The first meeting of the committee was scheduled for October 31.

Members and guests of the Board heard a suggestion from Carl Jonswold, chairman of the Distribution Division, that standards be adopted for both equipment and for oilburner installation. It was suggested that the seal of the Institute be adopted as a mark of quality on the standard equipment manufactured by members, and that the seal on installation certificates be used as a mark of quality of installation by members of the Distribution Division. Work has been started on this program by the Division's Code Committee, under the chairmanship of J. A. Collins, Eastern vice-chairman, Buffalo, N. Y. It is hoped the work may be completed in time for presentation at the Philadelphia show.

A. E. Hess, managing director, reported that the installation and service text on pressure atomizing burners would be ready for distribution before the end of October. This book will contain 21 chapters in 216 pages, and will be available immediately to only OHI members.

Mr. Hess also reported that the Combustion Reference Test Unit drawings have been completed, and that bids had been sought for the production of the unit, but due to lack of materials and manpower, there had been no offers to build the first of the test units. This equipment, consisting of a burner, furnace and testing and recording facilities, is designed to be used as a reference for oilburning as the Waukesha engine has been used as a reference for automobile engines. A possible market for about 200 of these units is estimated for the industry.

Frank Faust, chairman of the Engineering Committeee, reported that eighteen of the 34 laboratories that have been running tests on catalytic oils have completed their tests, and four more are expected to complete their runs before the end of the year. Work now is under way at OHI headquarters to compile the results of these tests and summarize it for the American Society for Testing Materials. A new committee of ASTM will consider these test results and possibly write new specifications for fueloils. Mr. Faust also reported that the Engineering Committee has received a copy of the new standard for furnaces fired with pot type burners. It was suggested by a board member that the provisions of the standard are too lenient to improve the construction and operation of these units, and the Committee was instructed to give the standard close study.

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Air which fills each unheated radiator must be driven out by entering steam before heat is obtained. Using this air as a "cushion" and limiting or increasing its elimination time, the largest or smallest radiator, whether it be near or far from the boiler, can be heated at the same time, thus balancing the job.

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NYAVCO vents three to five times faster than ordinary valves, because of unusually large vent port.

We also manufacture the "NEW YORKER" precision made valve of sealed thermostatic float type which embodies every refinement available in this type of construction and the "KNICKERBOCKER" of which thousands, together with other brands of airvalves, such as Air Out, Air-X-Pel, Manhattan, and Nos. 476, 621, 100, are now giving dependable service throughout the country. Backed by over 44 years experience, our products also include water gauges, Try Cocks, Pop Safety Valves and other specialties. Send for catalog and wholesaler discount sheet.

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fuel oil = oil heat

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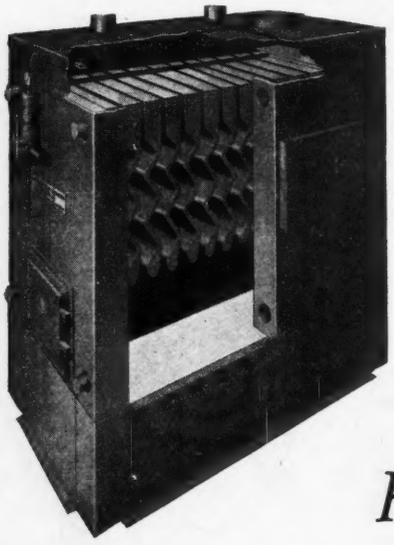

Cross section view of single type sectional boiler

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The fastest steaming boiler on the market, KOVEN WATERFILM, incorporates all the latest scientific developments to give quick heat, even room temperature and a plentiful supply of domestic hot water. These smartly jacketed patented boilers are made for automatic firing with oil, stoker or gas. They are available in a variety of models, suitable for large or small homes, apartment houses and industrial plants.

The sectional series boiler is especially constructed for use in large installations. This heavy duty boiler contains all the fine features of the WATERFILM line and can be taken through a 2 ft. door thus eliminating rigging costs and building alterations. The single series model illustrated contains one row of generators, however, new sections can be added whenever it is necessary to increase capacity. For more complete information write to:

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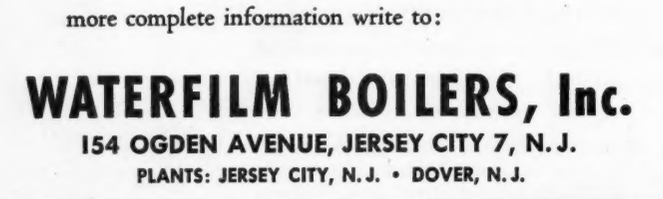

EVEN ROOM TEMPERATURE THROUGHOUT THE HOUSE

C. F. Curtin, secretary-treasurer, reported no resignations from OHI, and four new applications. The Miller Co., Meriden, Conn., was elected to membership in the Manufacturers Division, and the Atlantic Steel Boiler Co., Philadelphia; Combustion Utilities Corp., New York; and Guardian Utilities Co., Michigan City, Ind., were elected to membership in the Accessory Division.

An appeal was made to oilburner manufacturers to send all possible burners to the Pacific Northwest. Government officials expressed concern over the acute shortage of other fuels in that area, and asked that burners be made available to customers there who could use the now abundant heating oils. With oilburner production at a very low point due to shortages of materials, and an extremely active demand in all parts of the country, manufacturers expressed doubt that material relief could be provided for Northwestern users and dealers.

It was voted to hold the next directors meeting at New York on January 8, 1946.

Time Limit Revoked On Installment Financing

UNDER REGULATION W issued by the Federal Reserve System, time payments on heating equipment (including oil burners) insulation and other materials, articles and services in connection with repairs and alterations on urban, suburban or rural property, in connection with existing structures, was limited to 18 months' maximum maturity.

In accordance with an amendment issued September 28, 1945 by publication in the Federal Register, all restrictions on the length of time payments on real estate and on improvement loans will be cancelled effective October 15, 1945.

Effective October 15, the length of time payment paper which may be issued covering any extension of credit for the purpose of financing or refinancing,—

1. the construction or purchase of an entire residential building or other entire structure, or
2. repairs, alterations or improvements upon urban, suburban or rural real property in connection with existing structures, will be subject only to the finance company through which such paper is cleared.

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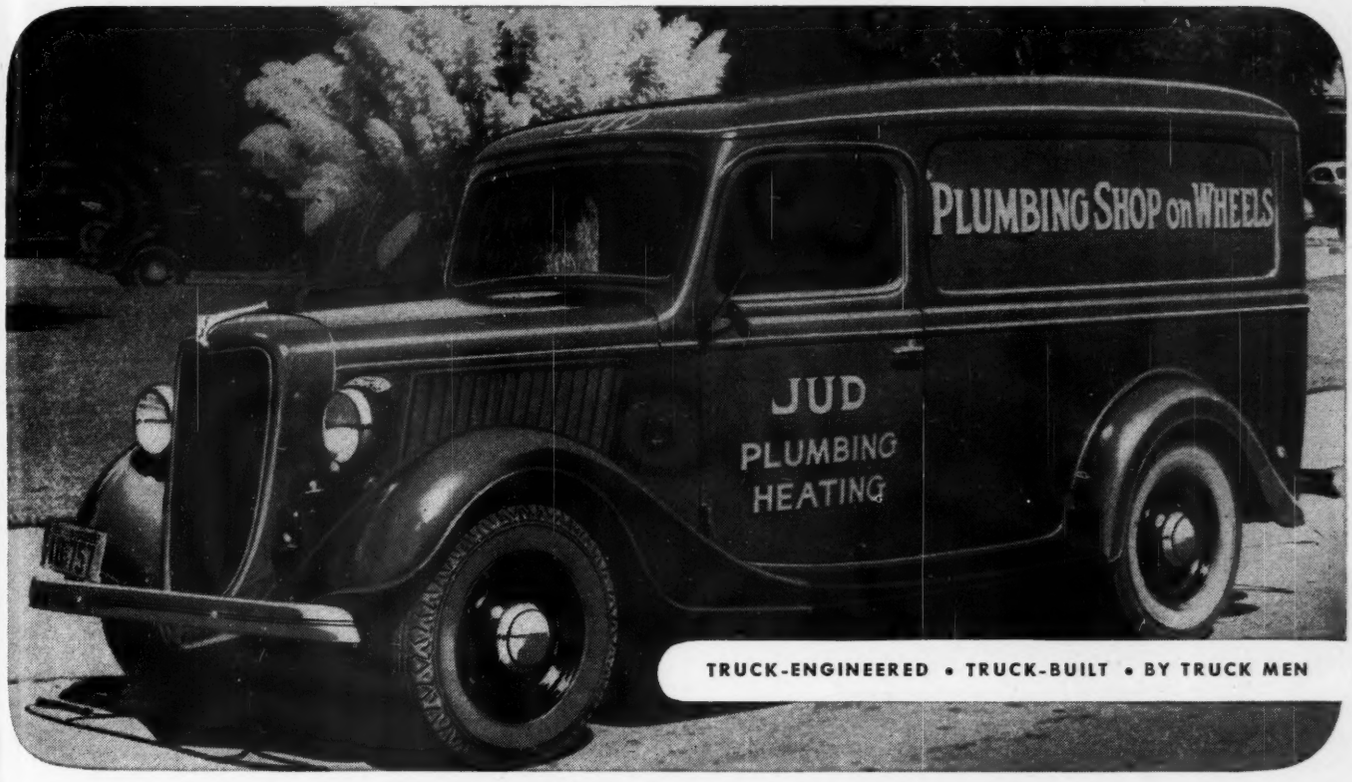

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Ed Jud's Owned 50 Fords . . . has 14 now—"most durable, economical of all trucks"

The sound chassis engineering in a Ford Truck—sturdy frame, generous spring capacity, rugged clutch, transmission and rear axle—as well as the strong construction of Ford bodies, has made the Ford Truck a favorite in the plumbing and heating business.

Here's what Mr. Ed Jud of San Antonio, Texas, says about it: *"I have been a firm believer in Ford products ever since we entered business in 1921, with two Ford Pickups. In 23 years we have purchased more than 50 Ford units, and operate 14 now. We find them the most durable, practical and economical vehicles on the market. They've rendered us noble service in enabling us to do over $3,500,000 worth of vital war work. We've always been able to get Ford parts and service."*

Today's new Ford Trucks bring you more Ford economy, reliability and endurance than ever. Pickup units now in production. See your Ford Dealer.

Ford

ADVANCED ENGINEERING IN NEW FORD TRUCKS

More Economy and Endurance
Easier Servicing

A STILL GREATER 100 HP V-8 ENGINE with NEW Ford steel-cored Silvaloy rod bearings, more enduring than ever in severe service • NEW aluminum alloy cam-ground 4-ring pistons for oil economy • BIGGER, more efficient oil pump and IMPROVED rear bearing oil seal • NEW longer-lived valve springs • NEW improvements in cooling • NEW efficiency in ignition • in carburetion • in lubrication • in ease and economy of servicing operations • And available in all truck chassis except C.O.E. units—the rugged, thrifty 90 HP FORD SIX-CYLINDER ENGINE, with many important advancements.

FORD CHASSIS ADVANTAGES: Easy accessibility for low-cost maintenance • Universal service facilities • Tough, forged front axles • Extra-sturdy rear axles with pinion straddle-mounted on 3 large roller bearings, ¾-floating type in light duty units, full-floating in all others • 3 axle ratios available (2 in 1-ton unit) • 2-speed axle available in heavy duty units at extra cost • Powerful hydraulic brakes, large drums, cast braking surfaces • Rugged 4-speed transmission with NEW internal reverse lock optional at extra cost on light duty units, standard on all others.

FORD TRUCKS

MORE FORD TRUCKS ON THE ROAD • ON MORE JOBS • FOR MORE GOOD REASONS

Fuel oil & oil heat

Proposed New Home Ceilings Fought by Building Groups

WHEN PRICE ADMINISTRATOR Bowles recently expressed a belief that Government should put a ceiling price on new homes, he stirred up a wave of objections from all elements of the building industry, as well as from national organizations like the United States Chamber of Commerce and the Producers' Council.

The question has been brought into sharp focus by the lifting on October 15 of all priority controls over building construction. Bowles believes that home building is one of the surest ways to employ a lot of people in a hurry and that a real building boom is greatly in the public interest. But, he feels, the boom will mature pretty slowly if builders are allowed to charge anything they like for houses in a high demand market. He also feels that new home prices are definitely a factor in living costs and if unchecked will further contribute to the inflationary spiral.

No one can quarrel with Bowles over the desirability, in fact the necessity, of holding down prices on new homes to the lowest practicable level. But his opponents think the same result can be had without the straitjacket.

They point out that costs of all building materials are under ceilings, and advocate that they remain so. Labor costs are fairly well fixed by unions and there is not much can be done about them. The remaining question then is how to prevent the builder from adding unreasonable profits. This probably can't be done in many cases, but outside of a temporary flush period in which some people will pay almost anything for a house, they contend that most of the public won't be sucker enough to pay much more than the house would have cost before the war.

In other words, they reason that the public generally wants a $6,000 house, and if the builder asks $8,000 for the kind of house the prospect had in mind, not many will be bought, and builders will be forced back to reasonable mark-ups.

One other factor that may have a deterring effect on overcharging is FHA's new policy of appraising the value of any house anytime anywhere and for anyone. If FHA insurance on a mortgage is sought, the applicant pays $10 for an appraisal of the house's value. FHA will insure 90% on houses of $6,000 or under. Above $6,000, FHA will insure 90% of the first $6,000 and 80% of the amount above that up to $10,000. The important point to recognize is that this insurance is based upon FHA's appraisal and not upon the asking price for the house.

While many banks, particularly savings banks, plan to handle a similar type of mortgage without the FHA complications, they will nonetheless be closely guided by FHA's general appraisal policy. Thus, if the builder asks an exorbitant price for a house he will have to get a large down payment, which not too many people will be willing to furnish.

Opponents of OPA home pricing also claim that the actual job of getting Government experts to price all new homes is an impossible one administratively, and that actual building progress would be much hampered if this were attempted. Their objection here, however, is not too realistic, for OPA could base ceilings on FHA appraisals, which in most cases are being made anyway.

Incidentally, it is worth noting that FHA will also appraise old houses for the

Built to Boost Your **PROFITS** *on Fuel Oil Deliveries!*

GOODALL *"Newtype Cord"*

FUEL OIL HOSE

You're *bound* to make more deliveries per truck per day, with "Newtype Cord." Why? *First,* its non-flattening, kinkproof construction and oil-resistant "Synplastic" tube cause its original maximum diameter to be retained at all times, assuring a full, fast flow of oil from truck to tank. *Second,* its comparative light weight and free flexibility make it easy to handle.

Contact Our Nearest Branch or Main Office NOW, for Details and Prices.

GOODALL RUBBER COMPANY · INCORPORATED

WE ARE PARTICIPANTS IN THE OWNERSHIP AND OPERATION OF NATIONAL SYNTHETIC RUBBER CORPORATION

THE GOODALL-WHITEHEAD COMPANIES

Philadelphia • Trenton • New York • Chicago • Pittsburgh • Boston
Los Angeles • San Francisco • Seattle • Salt Lake City • Houston

Factory—Trenton, N. J. Established 1870

SIMPLICITY . . .

MOR-SUN
PRESSED STEEL FURNACES

"The Sun Never Sets with MOR-SUN!"

For many years, a well known cartoonist has delighted us with his ridiculous and complicated inventions . . . . usually demonstrating how to do things the hard way.

In the pre-war era, it appeared as though this man was influencing gas and oil furnace design . . . . To achieve a lower stack temperature, designers added more trappings . . . . radiators, baffles, tortuous flue passages - - all conspiring to collect dirt and condensation . . . . or to cause pulsation.

MOR-SUN designers started all over again with fundamentals . . . plain, simple principles . . . . long known to furnace designers . . . . but dropped by the wayside in deference to obsolete production facilities . . . . or to a desire to impress the prospective owner.

Thanks to Morrison's unusual factory equipment . . . . MOR-SUN engineers were able to create a modern PRESSED STEEL furnace . . . . efficient, rugged, attractive . . . . and as simple as A-B-C.

MOR-SUN is worth waiting for!

MORRISON STEEL PRODUCTS, Inc. Buffalo 7, N.Y.

$10 fee, whether or not FHA insurance is contemplated. When the public generally learns of and uses this service, old home prices will probably ease down a bit.

◈

Profit Factors Established for Nine Types of Mfr.

RECONVERTING MANUFACTURERS of nine types of consumer and industrial items that are ready, or nearly ready, to return to the market have been given profit factors by the Office of Price Administration for use in working out rapid individual adjustments in ceiling prices. Action became effective October 3.

Manufacturers of commercial mechanical refrigerators, air conditioning units and equipment, and food products machinery were given factors for the first time by this action.

More specific factors than those previously announced were given for automatic electrical control equipment, commercial and domestic stokers having a capacity of less than 1,200 pounds per hour, elevators and escalators, hand operated petroleum dispensing pumps, leather luggage, plated, solid and hollow silverware, and stock millwork (covered by Revised Maximum Price Regulation 293).

OPA pointed out that when a profit factor for an industry is given, it does not necessarily mean that the products of the industry are eligible for adjustment. Particular products are eligible for adjustment only when they are specifically listed as such in the reconversion orders. These are, in general, such products as were not manufactured during the war or which were manufactured at a curtailed rate.

The profit factors given in this action will be used in connection with the reconversion pricing orders of July 23. While these orders are mainly relief measures, they can be used to work out individual adjustments by those manufacturers who are ready to start civilian production ahead of other firms in the industry. As the industry-wide actions are taken for these industries, manufacturers may, if they wish, change to the industry-wide formulas, OPA said.

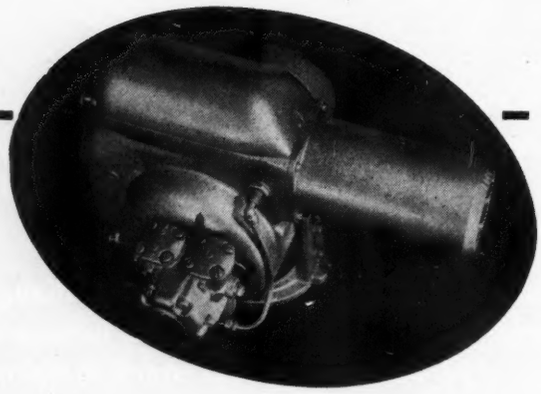
Reconverting manufacturers of eligible products may figure their new ceiling prices by adjusting their 1941 total costs for increases, since that time, in materials prices and basic wage rates of factory workers. The appropriate profit factor then is applied to that adjusted figure.

However, manufacturers with annual sales of less than $200,000 may use either the profit factors just announced, or their own average 1936-39 margins over cost. Concerns with annual sales of less than $50,000 may base their reconversion ceilings on total current costs instead of on adjusted 1941 costs.

Forms for use in figuring reconversion prices are available in district and regional OPA offices, and completed forms are to be filed in district offices, OPA said. The prices filed by small firms automatically go into effect 20 days after filing unless the applicants are informed to the contrary by OPA.

Products covered by the action and the applicable profit factors are: automatic electrical control equipment, 11.2; commercial and domestic stokers with capacity under 1,200 lbs. an hour, 5.5; elevators and escalators, 6.1; hand-operated petroleum dispensing pumps, 2.2; leather luggage, 3.5; silverware, 3.4; millwork, 2.2; commercial mechanical refrigerators and airconditioning units and equipment, 4.9; food products machinery, 4.5.

Chance of a Lifetime



VERY SOON — you're going to be given the chance of a lifetime—the chance to establish yourself as the leading oil burner distributor in your locality.

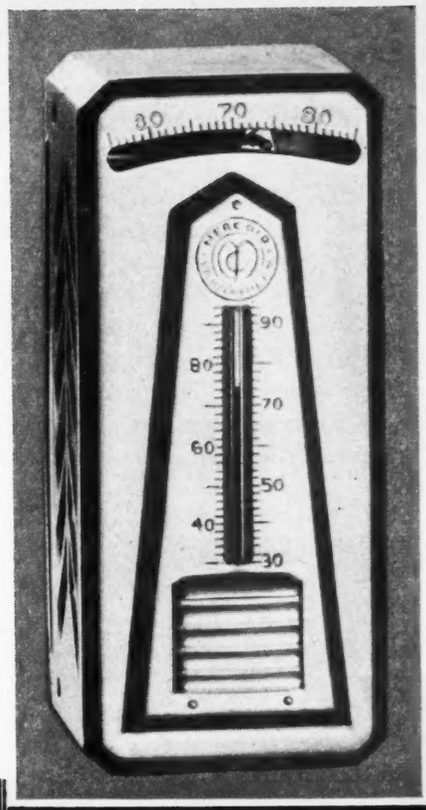
Thousands of home owners will be clamoring for the *immediate* installation of a new, post-war oil burner. Sure, you'll be able to sell them anything—good, bad or indifferent. If you're smart, you'll sell only the best—because in years to come today's installations will become the standards by which your organization is judged.

Take the first step toward a successful, profitable future by investigating the dependable, trouble-free, economical Herco Oil Burner today!

HERCO OIL BURNER CORPORATION, LANCASTER, PA.

Western States Representative:
Harold Winningham & Company
Main Office:
1112 Second St., Seattle, Washington
Branches In:
San Francisco, Los Angeles, Salt Lake City, Denver and El Paso.

HERCO
The Oil-Thrifty
OIL BURNER



MERCOID
SENSATHERM

The Unexcelled Thermostat for Even Room Temperature Control

THE MERCOID CORPORATION, 4201 BELMONT AVE. CHICAGO, ILL.

MAKERS OF AUTOMATIC CONTROLS ★ EQUIPPED EXCLUSIVELY WITH HERMETICALLY SEALED MERCURY SWITCHES ★ THEY GIVE BETTER CONTROL PERFORMANCE, AND LONGER CONTROL LIFE

fuel oil & oil heat

Industry Groups

Activities of local and national industry associations will be reported monthly in this department. Secretaries are invited to send reports of their group's activities, to reach the editor by the 20th.

New England Oil Men Protest Sympathy Strike

NEW ENGLAND members of Congress, Governors and newspapers received a letter from the Independent Oil Men's Association of New England, Inc., Boston, protesting "sympathy" demonstrations and rationing of oil in Boston on the part of labor organizations which were backing the oil strike in the Middle-West and South-West.

Clyde G. Morrill, executive director, said, "We feel that no local labor leader, no matter how wise he may be, should undertake the allocation of a necessity of life, establishing consumer priority, during an artificial shortage created by the union he represents. That is an assumption of authority by a labor leader of government powers that must be used to protect its citizens as a whole."

The Association is an organization of small oil men and independents in New England.

Crawford New President Of Indoor Climate Institute

AT THE 2ND ANNUAL MEETING of the Indoor Climate Institute recently held at the Book-Cadillac in Detroit, T. A. Crawford, General Manager of Timken Silent Automatic Division, Timken-Detroit Axle Company, was elected President succeeding Paul B. Zimmerman, who has held the office since inception of the Institute. L. N. Hunter of The National Radiator Company was made 1st Vice-President; R. E. Moore of Bell & Gossett Company and E. N. McDonnell of McDonnell and Miller, were re-elected secretary and treasurer respectively.

"America is on the threshold of the greatest home-building and modernization era in the history of the country," stated Crawford. "The heating and air-conditioning industries will be called upon to introduce into the American homes the full benefit of a wide range of equipment, which will raise the standard of living through technological developments. The Indoor Climate Institute for the past three years has been analyzing the many phases of the related industries which contribute to controlled indoor climate. As the first step in providing the public with unprejudiced information on the subject of heating and cooling for the home, the Institute has launched a program based on the idea of automatically-fired central heating systems. It is a startling fact that 9 out of 10 homes in the United States are without automatic heating, in fact, nearly half of the homes, or 19 million, are using stoves. A very understandable consumer booklet dealing with central heating systems of all types burning gas, oil or coal will, for the first time, provide the public with information which will be most helpful to the new home builder and in the modernization of old homes. The booklet will contain the best thinking of the various trade associations composing the heating industry. The nationwide distribution of the booklet by the Indoor Climate Institute and its membership will prove a definite incentive for home owners and building contractors to turn to the heating contractors and installing dealers for more informa-

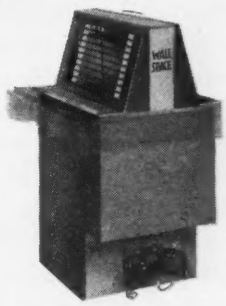
HOW
TO SPEED UP
RECONVERSION
Order Now
for 1946
By anticipating your needs and placing a tentative order now to meet your future transformer requirements, you will be able to speed up reconversion considerably. Let us work with you on your new designs.
We are already booking orders for next year. First come—first served!
DONGAN ELECTRIC MFG. CO.
2981 Franklin
Detroit 7, Mich.
The Dongan Line
Since Nineteen-Nine
WRITE
FOR
LITERATURE
DONGAN
TRANSFORMERS

Will you get your share of KRESKY DEALER PROFITS?

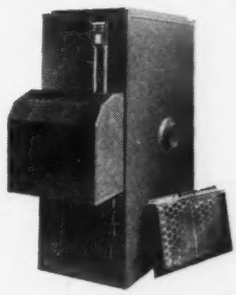
OIL heat should make greater strides than ever after the war and EXTRA sales mean extra profits. That's why dealers everywhere are looking into the KRESKY line now . . . making plans to round out their own line with KRESKY equipment.

First of all there's the KRESKY Floor Furnace, the *original* and still the only forced air oil-fired floor furnace bearing the Underwriters label. Then there's KRESKY range burners, presenting a huge opportunity for a conversion volume in some localities. Other items include the KRESKY forced air furnaces, water heaters and space heaters. All equipped with the patented KRESKY oil burner producing clean, economical, trouble-free heat.

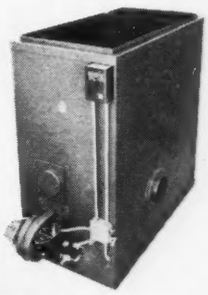
Look into KRESKY now. Write for full particulars on the attractive KRESKY Dealer Merchandising Plan.



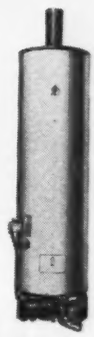
FLOOR FURNACES



UTILITY HI-BOY



FORCED AIR FURNACES



WATER HEATERS

FOR CONVERTING WOOD AND COAL RANGES

ARMY NAVY
KRESKY OIL BURNERS
UNSURPASSED
PETALUMA CALIF USA

Listed and Approved by Underwriters' Laboratories, Inc. To Burn No. 3 Oil (Diesel) or lighter

KRESKY MANUFACTURING CO.

Pioneers in Oil Burning Equipment Since 1910

PETALUMA CALIFORNIA

WORLD-WIDE ACCEPTANCE WON BY PERFORMANCE

fueloil & oil heat

tion on heating systems tailored to heating requirements."

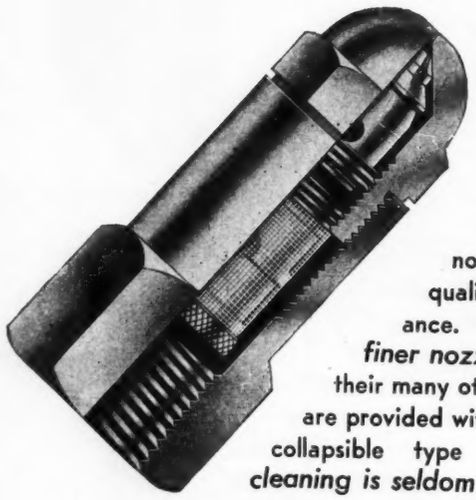
It is reported that Indoor Climate Institute will, in the near future, also take under consideration the development of a national advertising campaign and promotional activities which will focus the attention of the public and all allied groups in the building industry upon the vital subject of greater indoor comfort and health through adequate, properly installed, automatically-fired central heating systems in the home. Controlled indoor climate has been defined by the Institute as the 4th Dimension in Living, ranking in importance with food, clothing and shelter.

At the annual meeting the following representative cross-section of the leaders in the allied heating and cooling industries were elected to the Board of Directors: Paul K. Addams, Fitzgibbons Boiler Company, Inc.; A. T. Atwill, Quaker Manufacturing Company; C. T. Burg, Iron Fireman Manufacturing Company; Thomas Byrd, The Lau Blower Company; R. C. Cameron, Chrysler Corporation, Airtemp Division; Bruce T. Cunningham, Research Products Corporation;; J. K. Knighton, Servel, Inc.; C. E. Lewis, Perfex Corporation; C. D. Lyford, Minneapolis-Honeywell Regulator Company; J. M. McClintock, Freeman Stoker Division, Illinois Iron & Bolt Company; J. P. McIlhenny, Air Conditioning Department, General Electric Company; Joseph R. Murphy, Taco Heaters, Inc.; C. A. Olsen, The C. A. Olsen Manufacturing Company; Gordon Rieley, The Bryant Heater Company; Jack Searls, White-Rodgers Electric Company and Martin Weil, Weil-McLain Company.

EDCO

OIL BURNER NOZZLES

. . . that you can depend on!



Oil burner manufacturers and dealers all over the country (and Uncle Sam too) can tell you from actual experience that EDCO nozzles are the *tops* — in quality, uniformity, performance. There are *literally no finer nozzles made.* In addition to their many other features, EDCO nozzles are provided with such large capacity, non-collapsible type MONEL strainers that *cleaning is seldom necessary.*

EDCO SERVICEMAN'S

Nozzle Kits

Equipped with the finest accessories needed in servicing. Designed to protect the nozzles when not in use, while giving you the tools you need in minimum space. Three sizes—Pocket size and larger.

Write for details

EDDINGTON METAL SPECIALTY CO.

P. O. BOX K, EDDINGTON, PENNA.

N. E. Oil-Heat Starts Second School Series

OIL-HEAT INSTITUTE OF NEW ENGLAND has announced the start of Group II of its Technicians' Training School, the first group of which was completed shortly after Labor Day. Sessions which started at New Bedford, Mass., on October 22 for Group II will end at Boston, February 8. Classes will be held each Monday evening in the John Duff Building, New Bedford; Tuesdays in the Administration Building of the Salem School Department, Salem, Mass.; Wednesday nights at Lawrence, Mass., in the YMCA Building; and Thursday and Friday nights in the Herald-Traveler Building, Boston.

Only members and their employees are eligible to attend these schools which are designed to teach the fundamentals of oilheating service. Subjects taught besides oilburner service and parts, include heating systems and water heating.

Conference Directors Meet

ATLANTIC COAST OIL CONFERENCE directors met at New York, October 10, and by resolution, asked Congress and the State Governments to curb labor disturbances which have threatened the distribution of fueloils and gasoline to the public. Pointing out that petroleum products are essential to the "welfare and health of all citizens," the resolution termed the artificial shortages created by strikes "the assumption of dictatorship on the part of a labor leader, a condition we have just fought a long and bloody war to prevent."

The board welcomed back from military service Dixie Butler of the Home Fuel Oil Co., Passaic, N. J., one of the founders of the Conference, and elected him to fill a vacancy on the Board.

THE NEWS IS COMING about MONCRIEF'S POST WAR GAS FIRED Air Conditioning Units

From all points of the compass we are being asked about the NEW Moncrief line of postwar, Gas-Fired Air Conditioning Units.

Right now the news is in the making—about a NEW line that has

EYE APPEAL SALES APPEAL

and revolutionary, NEW design.

Moncrief NEW postwar models will be amazingly better—

1. ***Greater Durability.***
2. ***Easier to Install.***
3. ***Simple to Service.***
4. ***Profit opportunity for dealers.***

Complete details of Moncrief's NEW models will be published just as soon as possible.

"WATCH FOR IT"

★ MONCRIEF SINCE 1895 ★

THE HENRY FURNACE CO. **MEDINA, OHIO**

fuel oil & oil heat

Manufacturers Activities

Duo-Therm Names Managers

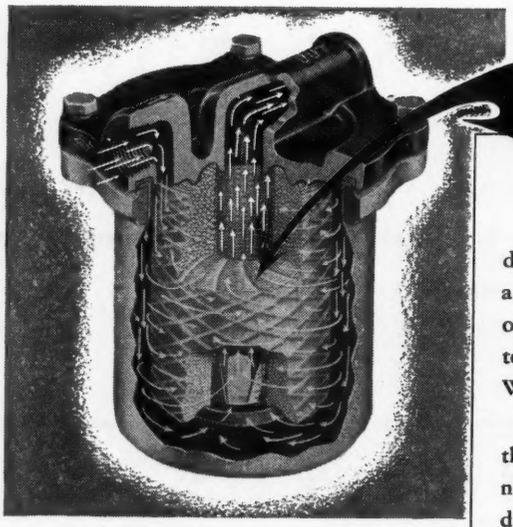
DUO-THERM DIV., of Motor Wheel Corp., Lansing, Mich., has appointed B. F. Burkholz, Milwaukee, as district manager of the West North Central district; J. K. Nelson, former company engineer, is district manager for the Ohio Valley; F. L. Blank, Greenville, N. C., is district manager of the East South Central area; George H. Phillips, former engineer, is New England district manager; and Lt. J. C. Carlton, recently released by the Navy, has returned to his position as West Coast district manager.

Easy Buys Jackson Burner

EASY HEATING Co., Detroit, has purchased the Jackson oilburner and will continue to manufacture it at the Detroit factory. L. V. Rohr is sole owner of the company. Field representatives are L. A. Root, Milford, Conn., Eugene Vomjour, Detroit, Don Stainbrook, Logan, Ohio.

It's the tube that does the trick...

Fulflo FILTERS



REMEMBER it's not the container

It's the element that does the filtering . . . and we don't shroud ours in mystery. We tell you how it's made. We're proud of it!

It's the only one that filters to a definite, predetermined degree of fineness – with the filtering fibers locked permanently in place.

Cannot rupture, channel or by-pass.

In a FULFLO FILTER every drop of oil *must* pass through one of the diamond-shaped filtering tunnels of the genuine HONEYCOMB FILTER TUBE. On its trip through these tunnels it meets one after another of fine filmy filtering webs of cotton fibre that trap and remove every microscopic particle of impurity down to a small fraction of a thousandth – much too tiny to see!

Genuine HONEYCOMB FILTER TUBES . . . available only for FULFLO FILTERS are the answer to your filtration problem. They save you money.

Commercial Filters Corporation

28 WEST 3D ST. BOSTON 27, MASS.

AGENTS IN PRINCIPAL CITIES

USE FULFLO FOR MICROSCOPIC FILTRATION

Jersey Wildcats in No. Carolina

IMMEDIATE PLANS TO DRILL for oil on the barrier beach off the coast of North Carolina have been announced by the Standard Oil Company of New Jersey. The wildcat well will be sunk near the old Cape Hatteras lighthouse which is 160 air miles southeast of Norfolk, Virginia and some 60 miles south of the famed Kitty Hawk, North Carolina air field of the Wright brothers' first flight.

Standard Oil geologists have spent more than two years studying the Atlantic Coastal Plain region and have supplemented geologic mapping with geophysical surveys including both gravimetric and seismographic methods.

Interpretation of the results of this work has led to the selection of Cape Hatteras for a first test, because it seems to offer the greatest asurance of a thick section of Upper Cretaceous beds probably deposited under marine conditions and rising shoreward in a series of overlapping wedge-shaped beds which would form suitable traps to retain any oil and gas which may be present. Geophysical data indicate that the ancient crystalline basement, upon which the Coastal Plain formations of Cretaceous and Tertiary ages were deposited, may lie as deep as 8500 feet in the Hatteras area. This is the ultimate objective of the test well.

Kalamazoo Expands Line; Enlarges Distribution

KALAMAZOO STOVE & Furnace Co., Kalamazoo, Mich., has enlarged both its line of equipment, and its distribution plans. The new line, which will include oil and gasfired warm air furnace units, a refrigerator and a washing machine, will be sold through 500 new dealer outlets in addition to the 285 prewar retail, company-operated stores. Kalamazoo's distribution formerly was entirely through its own stores and direct-by-mail. A two-week sales clinic will train dealers and salesmen in merchandising technique found successful in the factory-operated outlets.

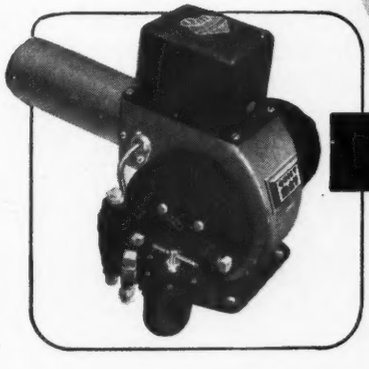
Ingersoll Announces Unit

INGERSOLL DIV., Borg-Warner Corp., has announced a utility unit for homes from $3,000 to $10,000, which embraces kitchen, laundry, bath and heating facilities. The automatic winter air conditioning unit is fired either by gas or oil.

When you think of a great "name" in Music... *you think of* **MOZART**

When you think of a great "name" in Oil Burners... *you think of*

QUIET MAY OIL BURNER



MAY OIL BURNER DIVISION

GEROTOR MAY CORPORATION

MARYLAND AVE. AND OLIVER ST. • MULBERRY 8585

PLANTS: BALTIMORE, MD. • LOGANSPORT, IND.

fueloil & oil heat

Oil-O-Matic Holds Service Schools

OIL-O-MATIC INSTALLATION and service men have been "brushing up" in a series of two-day factory schools recently conducted in Springfield and Boston, Mass., New York City, Philadelphia, and Richmond, Virginia. The Springfield meeting opened September 20, and the Richmond session closed October 5.

The series was directed by N. A. Palmer of the factory technical staff.

Over and above the latest technical information on both the Lo-Pressure and Hi-Pressure oil burners built by Williams, stressing newest installation techniques,

Service Meeting *in Boston*

speakers highlighted the following points:

1. Oil heat's field expansion for the next five years is geared to a market demand for a unit total of 2,493,000 oil burners, oil-fired boilers and winter air conditioners, representing $900,000,000 in retail expenditure.

2. To meet this heavy demand, the industry must put to work as soon as possible at least 12,000 new men in installation and service alone. This should absorb many returning veterans.

In a special message to the men who attended these schools, W. A. Matheson, manager of the Williams Oil-O-Matic Division, Eureka Vacuum Cleaner Company, Bloomington, Illinois, paid high tribute to the wartime role of oil heating service men.

Attendance at the Boston meeting, conducted at the Kenmore Hotel, numbered 165 Oil-O-Matic service men. Besides C. Allen Fisk, division manager, among those present were district representatives Jack Nesbitt and J. C. Cooper. Special factory representatives also included James Lahey and Bryan Wright of the technical staff.

The five eastern training sessions mark the beginning of a series which soon will be extended throughout the Williams Oil-O-Matic's entire field of operations.

Honeywell Opens New Branch

A NEW BRANCH OFFICE, to be known as the Peoria-Davenport Office, has been announced by Fred Kaiser, Chicago Regional Manager, Minneapolis-Honeywell Regulator Company. The office will be under the management of Edward Thompson, formerly of the company's Kansas City branch. James F. Wyllie of the Chicago headquarters industrial division has been transferred to Peoria to supervise industrial activities and will assist Thompson. William Beale, also of the

FEWER FREE SERVICE CALLS---
MORE PROFITS FOR YOU!

Thousands of alert dealers are cashing in, this winter, with SILOO FUEL OIL TANK SOLVENT—the *scientifically designed*, positive acting treatment for cleaning fuel oil tanks and heating equipment. SILOO dissolves the petroleum residues that naturally accumulate in tanks and clog lines and filters . . . keeps the entire system water-free . . . removes polymerized gums and acts as an inhibitor against electrolysis.

Dealers who service their customers tanks with SILOO profit *three ways:* first, make fewer free service calls; second, build lasting good will and third, earn more cash profits. SILOO passes all fire underwriters' requirements—is absolutely harmless to fuel and mechanism. Write today for complete information and dealer proposition.

PETROLEUM SOLVENTS CORPORATION
Tank Solvents Division
Solvents For All Types of Petroleum Residues
GENERAL OFFICES: 331 Madison Avenue • New York 17, N. Y.

THIS TRADEMARK...

WILL SHORTLY APPEAR ON AN ENTIRELY NEW LINE

of oil heating equipment — new, yet thoroughly tried out in the war. Since the early days of the oil heating industry — Master Kraft products have always embodied high quality and advanced engineering — and have BEEN BACKED by the kind of advertising and sales promotion that sells merchandise.

Master Kraft Dealers have made money — built new customers — increased their business each year.

NOW — with the new Master Kraft POSTWAR line, the profit opportunities for dealers will be greater than ever.

Before you sign any oil heating franchise — SEE the sensational new Master Kraft line.

We repeat . . . it's NEW . . . and something you should SEE.
Write for details.

HARVEY-WHIPPLE, INCORPORATED
SPRINGFIELD 1, MASS.

Chicago office, will be assigned to assist Thompson and will be located in Davenport, Kaiser said. With Beale will be Leland Kuntz, who has been on the Davenport staff, but who has now been made industrial representative.

Lonergan Ships Water Heater

LONERGAN MFG. Co., Albion, Mich., recently shipped its first postwar water heater as officials marked the event. The company has been totally engaged in war production since late in 1941, and now is laying out a modern production line to turn out water heaters and space heaters.

Bowser Buys Cabinet

BOWSER, INC., Chicago and Fort Wayne, Indiana, became the country's largest manufacturer specializing in industrial temperature equipment with the acquisition of the Industrial Temperature Cabinet equipment business of the Kold-Hold Company, Lansing, Mich., it was announced by R. Hosken Damon, president of Bowser.

Morrison Gets "E" Award

MORRISON STEEL PRODUCTS, Inc., Buffalo, N. Y., manufacturer of the Mor-Sun line of steel warm air furnaces, was awarded the Army-Navy "E" pennant October 8, for their war production record.

Bel Geddes Styles Gar Wood Line

GAR WOOD INDUSTRIES, INC., has retained Norman Bel Geddes, noted industrial designer, to restyle its entire varied line of products, it was announced by Glen A. Bassett, president.

This is said to be the first time that modern industrial design will be applied to such products as bulldozers and dump trucks of which the company is a large producer. Gar Wood also makes winches and cranes, tanks for carrying liquids and heating equipment.

Long famous as a pioneer in functional design, the Norman Bel Geddes organization designed the first streamline motor car and first streamline train. It recently completed a plan for rebuilding the city of Toledo.

York Forms Distributor Corp.

S. E. LAUER, president of York Corporation, announces the formation of York Distributors, Inc., a fully-owned subsidiary of York Corporation, to provide complete sales, installation, and service for York commercial air conditioning and refrigeration equipment in the New York area. W. A. Pusch has been named president and treasurer of the new corporation. Other officers are R. C. Follett, vice president and sales manager, and John F. Lebor, secretary. The board of directors is made up of Mr. Lauer, Mr. Pusch, E. A. Kleinschmidt, J. R. Hertzler and A. Christensen.

Penn Dealers at Factory

SEVENTY-FIVE DEALERS from key cities attended an open house week at the plant of Penn Boiler and Burner Mfg. Co., Lancaster, Pa., during which details of the new oilfired Packaged Heat units were explained by E. C. Stauffer, president. The line includes boiler units, split systems, forced warm air units and conversion burners.

Capitol Gets "E"

CAPITOL MFG. & SUPPLY Co., Columbus, Ohio, was given the Army-Navy "E" Award at ceremonies on October 9. Ohio Governor Frank J. Lausche was chairman of the activities.

NOW UNDER WAY—Greatest Promotion ever launched for the benefit of Fuel Oil Dealers!

Big Mobilheat Ads

scheduled for

Hundreds of Newspapers

circulation reaching

Millions of Home Owners!

SOCONY-VACUUM has already begun the job of telling millions of consumers—week after week—why oil heat is the most desirable type of home heating, why it pays them to get Complete Mobilheat Service.

This is the biggest fuel oil and oil heat advertising campaign on record, to help you win the battle for the expanding oil heat market. Insure *your* share of the profits with Mobilheat. It's one of America's largest-selling fuel oil brands —backed by tremendous resources, plus 79 years of petroleum research and marketing experience.

BE READY WITH

Mobilheat

SOCONY-VACUUM HEATING OIL

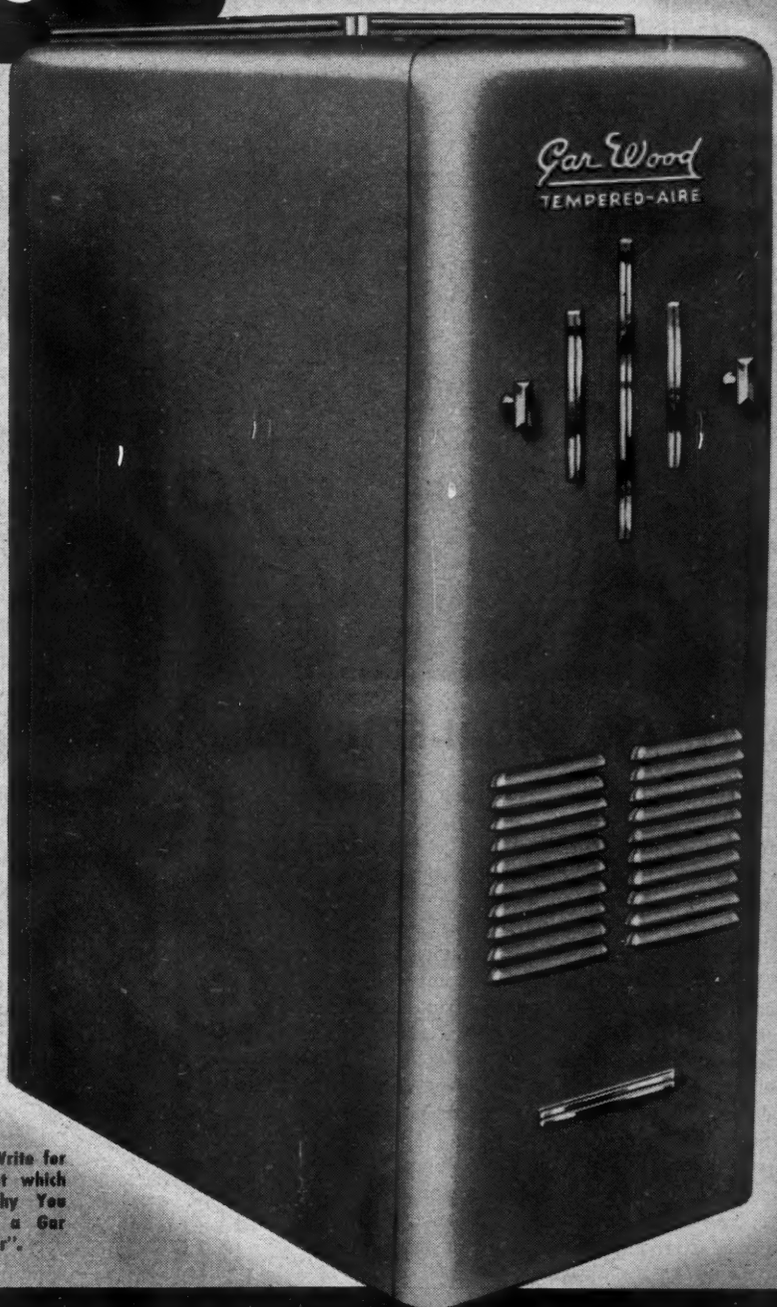
Mobilheat

Socony-Vacuum Oil Co., Inc.

THEY'RE NOT AVAILABLE NOW . . . BUT

The new Gar Wood Heating Units are destined to reach a new high in popularity. That's no wonder when you consider the thousands of owners who know from ACTUAL EXPERIENCE that Gar Wood stands for high efficiency and unusual economy of operation. Home owners *talk* about that kind of performance. And here's a word to the wise: the new oil-fired or gas-fired Tempered-Aire Units, and the oil-fired Boiler-Burner Units, Conversion Burners and Water Heaters are better than ever before . . . in performance, eye-appeal and SALES APPEAL.

Gar Wood HOME HEATING UNITS



HERE'S WHY It's Easy to Sell Tempered-Aire

- ★ Advanced Gar Wood Engineering
- ★ Tried and Proved for more than 10 Years . . . plus recent developments
- ★ Completely Automatic
- ★ The Original Oil-fired Furnace-Burner Unit on the Market
- ★ Beautifully Designed Die-Formed Cabinet
- ★ Now More Efficient than Ever
- ★ Proved Economy of Operation
- ★ More Compact . . . Smaller in Size

WHY YOU SHOULD BE A Gar Wood DEALER

DEALERS: Write for this booklet which shows "Why You Should Be a Gar Wood Dealer".

GAR WOOD INDUSTRIES, INC., HEATING DIVISION

7924 RIOPELLE STREET DETROIT 11, MICHIGAN

Canadian Distributors: Engineering Industries, Ltd., 282 Dupont St., Toronto, Ont.

HOISTS and BODIES . . . WINCHES and CRANES . . . TANKS . . . ROAD MACHINERY . . . MOTOR BOATS

fueloil & oil heat

Honeywell Opens So. Bend Office

MINNEAPOLIS - HONEYWELL Regulator Company has opened a new office in South Bend, Fred Kaiser, Chicago regional manager, has announced. The new office is a sub-office under the Indianapolis branch, Kaiser said, and will be staffed by Richard Stewart, who is to be district representative for Honeywell controls, and George Gilliam who will supervise industrial instrument operations.

The office is located at 224 West Jefferson Street.

Summary of Domestic Fuels Used in Massachusetts

	1942-1943 (net tons)	1943-1944 (net tons)	1944-1945 (net tons)
(All Sizes)			
Anthracite (Inc. Buckwheat)	3,172,936	2,777,176	2,668,061
(Buckwheat)	236,359	242,660	230,653
Bituminous Coal	1,043,767	1,089,000	1,068,544
Coke	760,446	829,080	873,626
Briquets	43,990	39,233	49,818
Other Manufactured Fuels	15,445	12,709	23,717
	(gallons)	(gallons)	(gallons)
Oil, #1-2-3-4	755,126,120	801,320,746	812,034,870
#5-6	*328,605,779	*285,291,520	*†380,560,050
Gas Installations, Central Heating Plants	12,341	12,577	13,205
	(cu. ft.)	(cu. ft.)	(cu. ft.)
Gas (Estimated)	4,888,576,400	5,310,050,200	5,507,862,100

*Industrial and Domestic.
†Increase due to reconversion allowed during Summer and Fall of 1944.

...but You can now get TRI-ROTOR PUMPS, too

The illustration shows a partial shipment of Yale & Towne's TRI-ROTOR Pumps for handling high octane gasoline, aromatic fuel and lubricating oil.

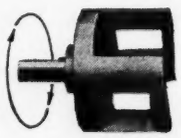
Other TRI-ROTOR Pumps, constructed on the same principle — a rotary pump's high volumetric efficiency, a piston pump's positive handling characteristics—*are available, now*, to the petroleum industry for commercial use.

TRI-ROTORS handle liquid with economy of power and low operating costs, without over-heating, chewing, foaming or aerating the product — and with only three moving parts, maintenance is minimum.

Three head styles are available: Solid, By-pass and Variable Volume Head, covering all types of truck pump installations. Sizes: 5 g.p.m. to 200 g.p.m.

Please wire or mail your requirements to Pump Division. Priorities are no longer required, so get your order in soon.

The Yale & Towne Manufacturing Company, 213 Henry Street, Stamford, Conn. Representatives in major cities.


A ROTOR

A PISTON

A SHUTTLE

Only 3 Moving Parts

TRADE YALE MARK

MAKERS OF THE FAMOUS YALE LINES OF LOCKS, HARDWARE, HOISTS AND INDUSTRIAL TRUCKS

Three Seasons Fuel Use Reported by Mass. State

CONSUMPTION of various kinds of coal, as well as fueloil and heating gas during the past three heating seasons has just been reported by the Department of Labor and Industries of the Commonwealth of Massachusetts. John P. McBride is director. The table is shown above.

All Restrictions Removed on Bulk Station Construction

THE PETROLEUM ADMINISTRATION FOR WAR announced that all restrictions on the use of materials or equipment for the construction of filling and bulk stations used in the distribution of petroleum products were removed effective October 15.

Action was taken by rescinding Petroleum Administrative Order 12, which placed a limitation of $10,000 on the cost of pumps, tanks, and other equipment and materials used in the construction of a filling station and a limitation of $40,000 on the total cost at a bulk plant.

The action coincided with an announcement by the War Production Board of the removal effective October 15 of all restrictions on the use of materials for all types of construction.

Has Siloo Counter Display

PETROLEUM SOLVENTS Corp., New York, has released a counter display to aid dealers and service organizations in selling Siloo Fuel Oil Tank Solvents. Lithographed in three colors, the counter card is 13 x 17 ins. It is recessed to hold a can of Siloo and there is a pocket from which the customer can take a circular.

KNOWN AND USED THE WORLD AROUND

Aldrich Oil Burners and Burner-Boiler Units were standard equipment in United States Insular Bases the world around. That's proof of unmatched efficiency, performance . . . All during the war, Aldrich Co. worked night and day at their regular job—producing extra-value burners and burner-boiler units . . . Post war improvements are facts—not promises—in Aldrich equipment.

HEAT-PAK Burners Models AX and BX

Embodying famous Aldrich features, HEAT-PAK Model AX (.75 to 4.00 G. P. H.) and Model BX (3.00 to 8.00 G. P. H.) are being produced as fast as materials become available . . . Production of famous HEAT-PAK Burner-Boiler Units and oil-fired Water Heaters is limited only by manpower and materials.

SERVICE-FREE

Aldrich engineering genius, designing skill, and production experience combine to give you equipment that is practically service free. No wonder Aldrich led the industry in prewar volume! Look to Aldrich for leadership in oil-fired equipment.

Aldrich

COMPANY

WYOMING, ILLINOIS

fueloil & oil heat

Mack Tractor Hauls Greatest Liquid Load

THE BIG MACK DIESEL illustrated makes the task of hauling the greatest liquid load ever transported over highways a simple matter for West Oil Co., Detroit. The Mack tractor, nicknamed Big Bob, hustles the transport tank unit and its capacity load of 12,000 gallons over the road on four tandem axles and a king's ransom in tires, 34 in all.

Charles Bennett, former sales manager for the Landwehr Heating Co., Philadelphia, and more recently with WPB in Chicago, has joined Montgomery Ward in Chicago.

Francis J. Morrin has been made service manager of the Automatic Heating and Cooling Co., Detroit. Mr. Morrin started as an electrician in the Worcester (Mass.) branch of the Socony Burner Corp., early in 1925, moving to the Detroit Branch of Timken in 1926, and has served there continuously under Timken and the present company.

A. P. Frame, director of the Refining Division of PAW, resigned October 10 to return to Cities Service Co., as vice-president of Petroleum Advisers, Inc., New York, a subsidiary in charge of Cities Service manufacturing, research and development.

Curtis H. Soderberg has resumed his prewar duties as manager of the Philadelphia branch of Perfex Corp.

James C. Scanlan, president of the Pennsylvania Oil Co., Somerville, Mass., died suddenly October 19. Mr. Scanlan was 48 years old. From 1930 through 1936, he served in the State Senate, becoming Democratic floor leader.

Lawson H. Yates, former sales manager for Allen Mfg. Co., Nashville, has formed a distributing organization covering twelve southern states and West Virginia, to sell plumbing and heating equipment. His plan includes use of station wagons by his men to carry actual samples of the lines to the customers.

THE PUMP THAT DOES THE JOB!
The TEESDALE T.U.X.
Heart-Beat of the BURNER'S OIL F-L-O-W!
- 30-Gallon Capacity
- Silent and Leak-Proof
- Self-Priming
- Vapor and Oil Tight
- All Parts are Interchangeable
- Passed by the Underwriters

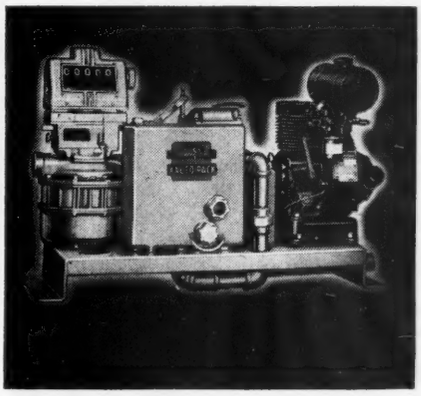
INQUIRIES promptly serviced

TEESDALE MFG. CO.
Producers of Teesdale Oil Pumps and Accessories
427 Market, S. W., Grand Rapids 3, Mich.

CSE BAROMETRIC DRAFT CONTROLS
THE MARKET WILL BE EVEN LARGER AND MORE PROFITABLE THIS SEASON
DRAFT KOREKTOR Type F909
A low-cost open check control for coal and oil burning installations. Simplified, outside draft adjustment, rust proof, positive locking and fool proof.
DRAFT KOREKTOR 906 6 inch
Low cost, highly efficient. Has close-fitting blade; knife-edge, non-clogging pivots; simplified outside draft adjustment; long tee side, or sold less tee.
Fuel-Saving Starts With CONTROL
We manufacture a COMPLETE line of draft controls for every size and type of heating plant.
Cole-Sullivan Engineering Co.
1300 No. Third St. Minneapolis 11, Minn.

One Quart of Gas

MOVES 2,400 Gallons of Fuel Oil



Delivering 2,400 gallons of furnace oil at the cost of only one quart of gasoline sounds impossible. But here's an instance where BOWSER XACTO PACK did the impossible and in addition, cost practically nothing to operate.

The following figures are from the actual experience of a prominent distributor of petroleum products in Providence, R. I. Here's the story. This distributor installed a BOWSER XACTO PACK on one of his smaller trucks. He found he could deliver 2,400 gallons of oil with the consumption of only one quart of gasoline. He also found that he saved wear and tear on his truck motor which he had previously used to drive his pump through a power take-off. Naturally, the Xacto Meter also gave him an accurate accounting.

The BOWSER XACTO PACK is a compact, complete, accurate metering and pumping unit. It is especially valuable for use on furnace or range oil trucks, for road contractors, in industrial applications, at bulk plants—or wherever an efficient, self-contained metering and pumping unit is desired for transfer of refined petroleum products.

You, too, can enjoy the many advantages of a BOWSER XACTO PACK. Why not fill in and mail the coupon today for full particulars.

THE NAME THAT MEANS THE
EXACT CONTROL OF LIQUIDS

BOWSER
ESTABLISHED 1885

BOWSER, INC.
Meter Division, Dept. 10-K,
Fort Wayne 2, Indiana.

Please send complete information on the money-saving BOWSER XACTO PACK.

Name.....

Company.....

Street.....

City.....Zone....State.....

Vaporizing Service

(*Continued from page 48*)

writer's opinion that they should be equipped with cleaner rods, because a slight carbon formation at the burner inlet causes a reduction in the flow rates of both the low and high fire, resulting in the low fire dropping down on the bottom of the pot, and the high fire being pulled down into the burner proper, instead of burning in suspension above the top of the pot. Both of these conditions cause excessive carbon formation, but might not cause flame failure for days, or even weeks.

By the time a service call becomes necessary, the pot is usually in very bad condition. Complete Cleaner Rod Assemblies (figure #3) are available from numerous manufacturers, such as Duo-Therm, Lochinvar, and the Miller Co. It is easy to fit these rods to units which originally did not have them. If the rod is too long, cut a piece off the end; if the rod is too short, it will have to be replaced with a steel rod of the proper length. The rod should extend approximately 1" inside the pot, when the handle is pushed

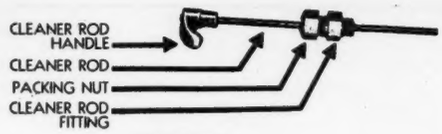


FIGURE 3

tight against the packing nut, and a stop should be provided by flattening the rod about 4" from the handle end so that it will not pull through the fitting, when the handle is pulled out to its normal operating position. The assembly replaces the drain plug, which is part of the old feed line on almost all units. Be sure to instruct the owner to operate the rod at least once a week, and to always leave it in the pulled out position.

Calibration

Service on the C.L.V. has been covered in a previous article, and calibrating the oil flow rate is sufficiently important to warrant a future article. Suffice to say here that too many service men have attempted to adjust these units by eye. It cannot be done, not even by experts. Care, patience, and a cubic centimeter graduate are essential to properly adjust the oil flow from a Constant Level Valve.

Draft Setting

A fire should be started in the unit, and after waiting a sufficient length of time for good draft to be established, the draft should be checked with a draft gauge, and the draft adjustor set according to the requirements of the manufacturer's specifications.

Fueloil

When fueloil is vaporized there is always a certain amount of carbon residue. The amount for all practical purposes is dependent on the grade of oil used. A glance at the fueloil specifications will show that there is prospectively five times as much carbon residue in #2 fueloil as in #1 fueloil, and thirty times as much in #3 fueloil, as in #1 fueloil.

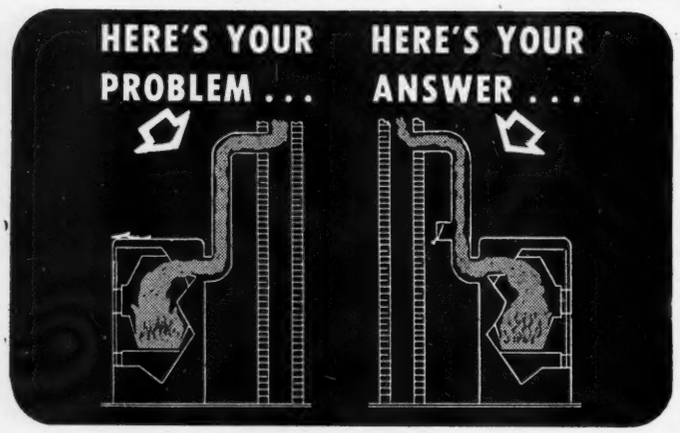
Why not stop trying to compete with the ability of mechanical burners to burn #3 fueloil, and instead recommend wherever possible the #1 grade of oil these units are inherently built to burn. Higher efficiencies will usually more than offset the price differential, service calls will be reduced considerably, and service personnel will become convinced that these units can give clean burning.

(*Continued on page 80*)

Fuel-Saving Starts With CONTROL

Field

BAROMETRIC DRAFT CONTROL

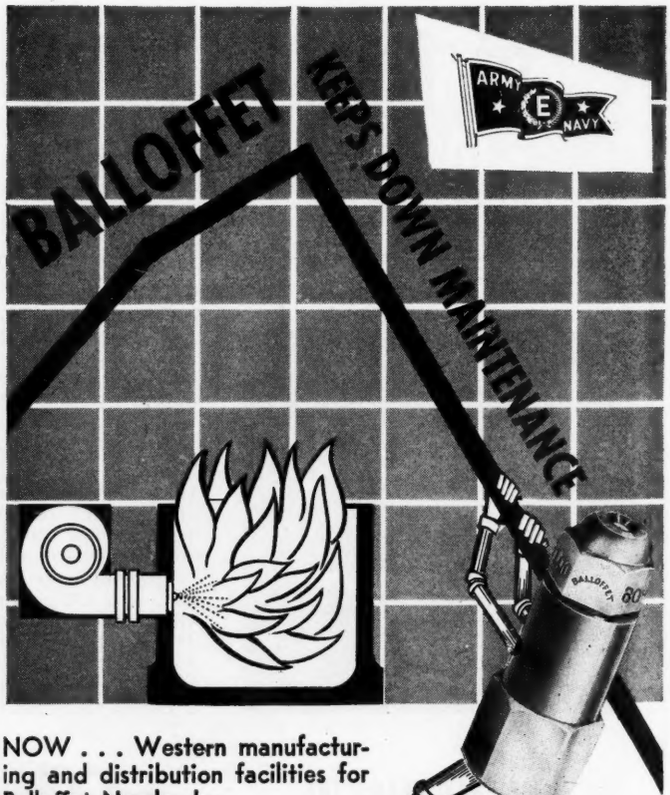


Excessive, uncontrolled drafts draw heat up chimney; waste 5% to 25% of fuel. Manual damper cannot control this waste.

The Field Draft Control holds draft to a minimum; saves 5% to 25% of fuel. Easily installed; profitable to handle.

Write today for full information.

FIELD CONTROL DIVISION MENDOTA, ILLINOIS

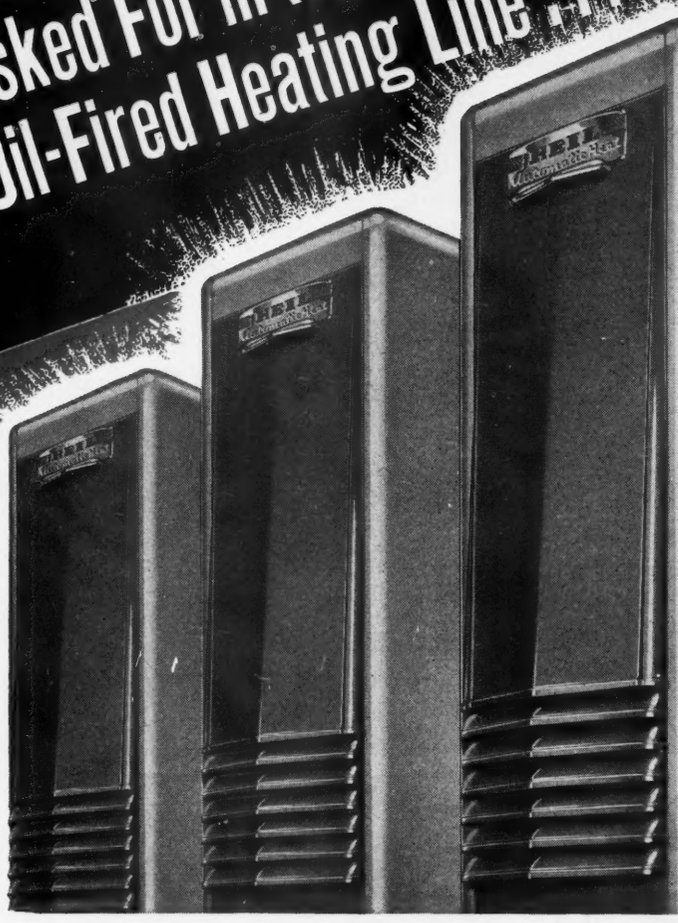


NOW . . . Western manufacturing and distribution facilities for Balloffet Nozzles by

DELAVAN ENGINEERING CO.
3009 Sixth Ave. - Des Moines 14, Iowa

BALLOFFET DIES AND NOZZLE CO., INC.
6825 ADAMS STREET GUTTENBERG N. J.

These are Features *You* Asked For in the New Heil Oil-Fired Heating Line . . .



- Distinctive Styling
- Greater Accessibility
- Operating Efficiency
- Advanced Engineering
- Quality Construction

You need far more than a prewar line *with a quick face-lifting* to satisfy your customers' demands for new and better postwar oil-fired heating equipment!

That's why Heil's postwar models are brand new from heat exchangers to casings—why every feature has been designed the way you dealers want it, for greater satisfaction to your customers and greater savings to you in installation and service.

Every part in each new Heil model has been searchingly analyzed to see how it could be improved in any way, large or small. Every blueprint has been double checked to make sure that each design measures up to present-day standards of operating efficiency. Every distinctive style note has been the result of hours of planning by one of the country's leading industrial designers. And, what's vitally important to you, every new feature has proved its worth after painstaking tests in Heil's modern research laboratory. This new line is a partnership between your ideas and Heil's reputation for sound engineering and quality construction.

MANY VALUABLE TERRITORIES STILL AVAILABLE

Think what it means to you in greater profits to handle a line that's really modern in every detail. And think of the advantages you get from Heil's friendly, straightforward dealing and intelligent merchandising policies. Mail the coupon today for complete details about the new Heil line, the powerful selling aids under preparation and the facts about what a Heil franchise means to you in increased sales.

This Book Shows How Heil Engineering Interpreted *Your* Suggestions to Make The Most Salable Line on the Market

The Heil Co., Dept. F-11
Milwaukee 1, Wisconsin

Send me your dealer pre-view book showing full-color reproductions of the new Heil models and complete details about the Heil franchise, Merchandising Assistance and openings in my territory.

Name.....
Company.....
Address.....
City.....**Zone**...**State**.....

THE HEIL CO.

GENERAL OFFICES • MILWAUKEE 1, WISCONSIN

Manufacturers of Quality Automatic Heating Equipment Since 1924

If the foregoing service policy is put into effect the units will be brought to the state of installation perfection they should have had the day they were originally installed. The tank will be correctly installed and contain the proper grade of oil. A line filter will protect both the oil supply line and the Constant Level Valve, which means both the inlet flow and the outlet flow from the valve will be positive. The Constant Level Valve itself will be accurately flow-rated and the Cleaner Rod will prevent carbon deposit from interrupting the flow of oil into the burner. The unit itself will be level and clean and the draft will be properly adjusted. The oil supply line, the draft setting and the flow-rate adjusting screws should not have to be rechecked on future service calls.

Two Things Will Change

Remember there are only two things that will change the flow of oil into or out of a constant level valve which is operating under ideal conditions: No. 1, a blockage caused by dirt or sediment and, No. 2, a change in the grade of oil. If dirt or sediment causes the change, when the control is cleaned it will come back to the original flow rate settings, without your touching the adjusting screws.

Lack of understanding has resulted in service men turning adjusting screws up and down haphazardly, trying to remedy conditions which are far removed from the adjustment of the control.

Constant level valves should only be calibrated once, and from then on your efforts should be expended toward maintaining that original setting by keeping the affecting parts clean.

It is ofttimes a good idea to seal the heads of the adjusting screws with sealing wax or soft solder, to prevent an overzealous customer, or a mis-informed service man from destroying your good work without your knowledge.

Bring your installations up to date and inaugurate a service policy that prevents service personnel from making unnecessary and usually harmful adjustments. It will pay dividends in that the average service call will consist of checking the line filter cartridge, checking the C.L.V. strainer (if it is clean, the inside of the C.L.V. is also clean), reaming the oil feed line, and starting up the burner.

James B. Finger recently was named divisional sales manager of the Coroaire Heater Corp., by A. W. Conley, vice-president and general manager. He returns to Cleveland from the New York headquarters of the National Association of Manufacturers where he was director of promotion. He formerly was an advertising and sales promotion executive for the Cleveland News.

D. Grey Knowles has been appointed district sales manager of the Fluid Heat Div., of Anchor Post Fence Co., Baltimore, W. F. Brannan, president, has announced. Mr. Knowles formerly was assistant sales manager of the Oil Heating Division of Sherwood Bros., Baltimore.

Make EXTRA PROFITS This Easy Way!

POORER grades of burning oils and acute labor conditions are no doubt putting a terrific strain on your ability to give proper service to your customers. Get away from these adjustments and cleaning difficulties by selling KLEEN-FLO Fuel Oil Conditioner. KLEEN-FLO helps preserve equipment and increases oil burner efficiency—improves combustion—reduces carbon and soot formation—eliminates "puff backs," odor and smoky chimneys — overcomes water and sludge. One quart of KLEEN-FLO conditions 500 GALLONS OF OIL—simply add thru oil fill line. Tested, approved and used by many of the country's great industrial plants. Write for profit-making facts today.

COMBUSTION UTILITIES CORPORATION

MEMBER OHI OIL HEAT INSTITUTE OF AMERICA

1451 Broadway, New York 18, N. Y.
Los Angeles Office: 742 South Hill St. Suite 1119

WANTED

One of the oldest and most progressive firms in the oil heating and air conditioning fields—well-established, well-managed and well-financed—requires the services of an expert

DEVELOPMENT ENGINEER

This, we believe, is a distinct opportunity for the right man as our plans for the coming years allow full scope for original and sound ideas in modern heating and air conditioning, and the man who can design such equipment will profit accordingly. You will be part of an organization that can manufacture and sell what you design —our present high-grade and widely distributed line is proof of this. In answering give full details, age, experience, background, etc.

Box 536, c/o Fueloil & Oil Heat
232 Madison Avenue New York 16, N. Y.

Accumulated demand for CENTURY Oil Burners can not be met this month or next....

The demand for Century oil-fired heating equipment that accumulated during the war years is tremendous and since V-J Day orders have been pouring into our offices. There will be some delay in filling these orders as there is a critical shortage of motors and castings, but we expect the material situation to improve shortly and will then increase our production volume to take care of your orders. At the same time our engineering department is busily engaged in developments and improvements for the entire line of Century equipment. These new designs and improvements will mean more sales and greater profits for you. Until the shortage is eased and our production schedules can be stepped up, we ask your understanding and cooperation. More detailed information about the new 1946 Century line of oil heating equipment will be announced as early as possible in this publication.

ARMY ★ E ★ NAVY

Employees of the Century Engineering Corporation, Ordnance Division, have for the third consecutive year been awarded the coveted ARMY-NAVY "E" award for excellence in war production.

CENTURY ENGINEERING CORP.

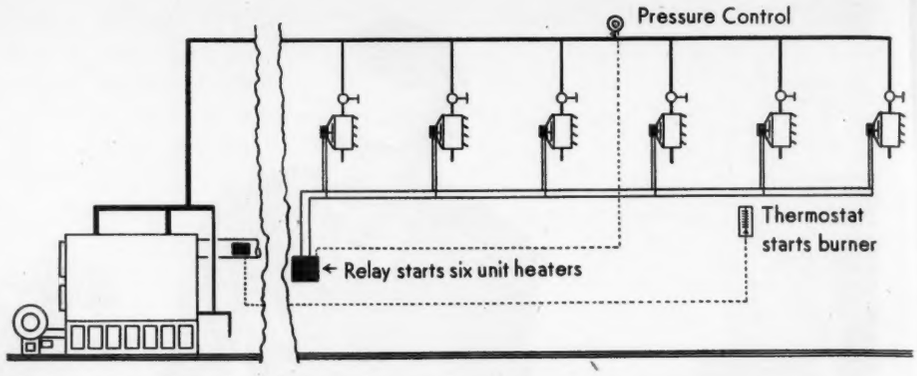
CEDAR RAPIDS, IOWA

OIL BURNERS • BOILER-BURNER UNITS • WARM AIR FURNACES
HUMIDIFIERS • WATER HEATERS • AIR CONDITIONING

fuel oil & oil heat

Everyday Snags

Simple Control Improvement



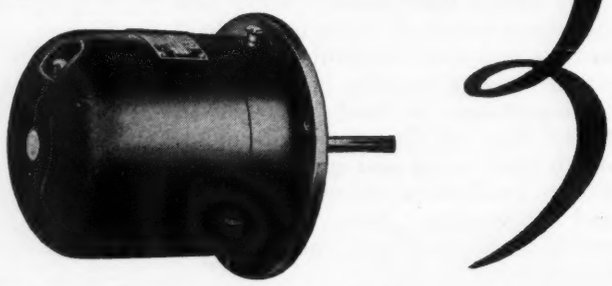
HEATING A large garage and repair shop, this steam boiler showed very high stack temperature when a combustion test was made. A high firing rate, 14 gph, was being used, it developed, to obtain steady operation from six unit heaters whose motors were being started and stopped simultaneously.

The accompanying diagram shows the control layout. The oil burner was started by a room thermostat located in the garage. When the pressure in the steam main rose to five pounds, the reverse-acting pressure control shown high in the drawing would snap "on" and give current to the solenoid coil of a large industrial type relay. Wired in the main feed line for the six unit heater motors, this relay started the six motors simultaneously at five pounds steam pressure, and stopped them when the steam pressure dropped to two pounds.

With the boiler fired at a reasonable rate for its capacity, about 10 gph, the steam pressure rose rapidly enough when the oil burner started, but then, when the six unit heater motors started simultaneously at five pounds steam pressure, it dropped from five pounds to two pounds in less than five minutes. With the heaters idle it rose rapidly again, only to drop as rapidly when the heater motors started once more. The overall result was that use of 10 gph firing rate caused the unit heater motors to start and stop in a highly unsatisfactory manner, while the oil burner ran steadily.

To arrive at satisfactory operation of the unit heaters with the lower firing rate, simple changes were made in the unit heater controls. The large relay and the reverse-acting pressure control were removed. A reverse-acting temperature control of the "surface" or "strap-on" type was installed on the return line of each of the six unit heaters (see small diagram) and wired to start the particular unit heater motor when this line became warm. To distribute the steam properly among the unit heaters when the system is not filled completely with steam, a proper size orifice was installed in a union in the steam feed line of each heater. The room thermostat was moved to the most important areas of the garage, and the unit heaters closest to this area were favored by installing larger orifices for them than for the other heaters, and by setting the

OHIO MOTORS



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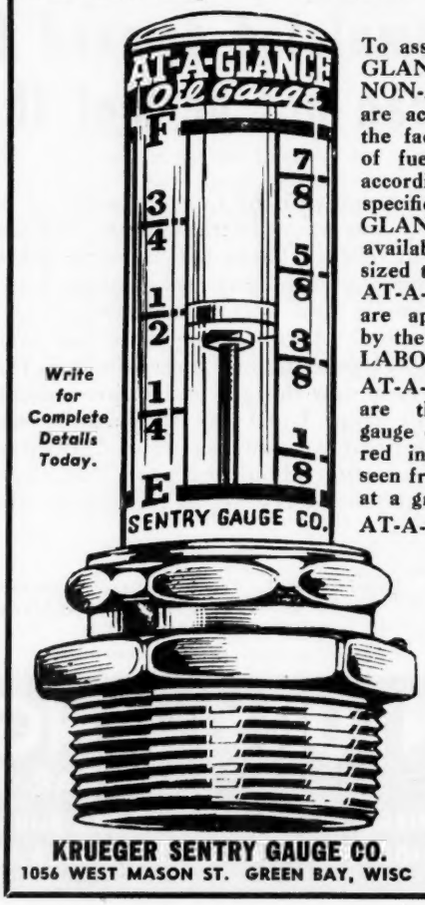

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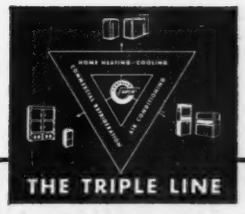

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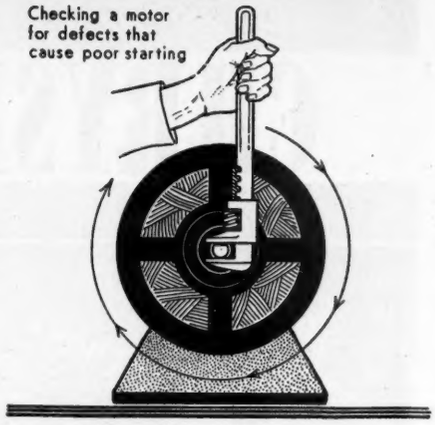
unit heater temperature controls at 125°, whereas the controls which start the motors of the other unit heaters were set at 150° to 180°.

The result of making these changes is that one unit heater motor starts at a time, as steam flows into the system after the room thermostat starts the burner, and the most important unit heaters are the first to start. During mildly cold weather, only three of the unit heater motors start before the thermostat stops the oil burner. During colder weather, all six unit heaters go into action when the oil burner goes through its normal cycle. For the first hour the oil burner runs after the room thermostat setting is raised from 50° to 65° on a severely cold morning, some of the unit heater motors start and stop while the others (those which were selected as most important) run steadily. After about two hours of steady burner operation at the 10 gph firing rate, the heating load has been decreased sufficiently by raising the building temperature, and the steam output of the cast-iron boiler has increased sufficiently to keep all six unit heaters running continuously.

Although this control arrangement still leaves much to be desired, it has resulted in the desired fuel savings. Cutting the firing rate from 14 gph to 10 gph reduced the stack temperature from higher than 1000°, to 680°.

Bench Test for Motors

IF YOU ARE CAREFUL not to let things fly and hurt yourself, you can use this very effective method for checking on the starting ability of a small motor. If the motor shaft has a flat spot, tighten a large monkey wrench to the shaft. While you hold the motor itself tight with one hand, and the wrench tight with the other, have someone else close a switch or connect together wires to place 110-volts on the motor. The shaft, trying to turn, will make the wrench tug violently. You can safely apply the test to motors as large as one-sixth horsepower. But don't let go of the wrench unless you want to get hurt! With the current going through the motor and the motor humming and tugging, you swing the wrench slowly through a full circle. Do this several times, first in the direction the motor shaft wants to go, then in the other direction. If at any point the wrench tugs differently or bumps or jerks, you have found a bad spot. You may find a spot where the shaft tugs feebly or not at all. These evidences of poor starting ability call for repairing the motor yourself, if you do that when you encounter minor motor defects, or sending it out to be repaired by motor specialists.

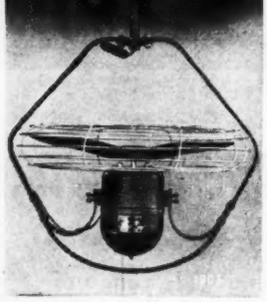


Checking a motor for defects that cause poor starting

Don't keep current going through a stalled motor long enough to overheat and damage the windings. To play safe, you can place a heavy resistence in series with the motor for the test; for example, screw

FOR THAT "HARD-TO-HEAT" ROOM

THE Reco HEAT CIRCULATOR FAN



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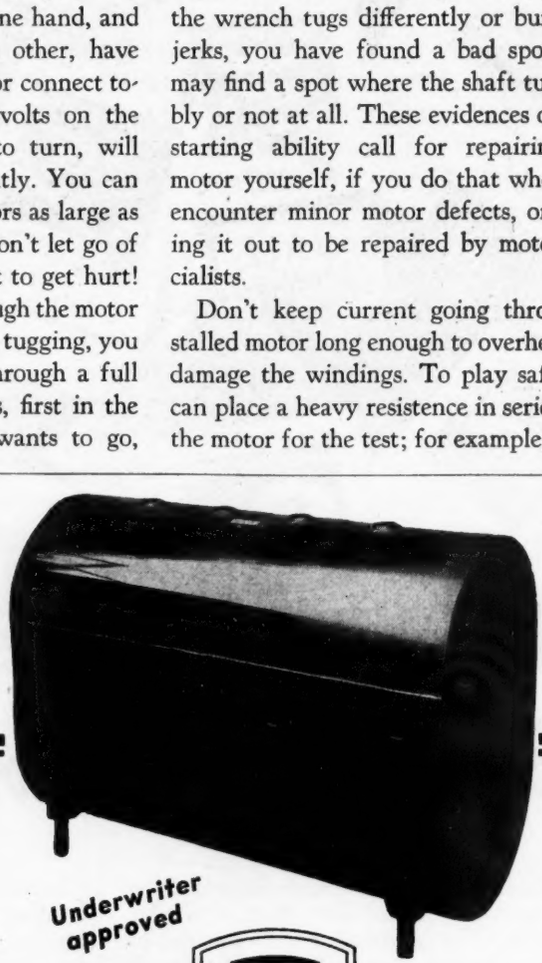

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Staco Tank Features: Double dished style heads; embossed and pierced for spud openings; fitted for pipe legs. 275 gals. Write for earliest delivery date.

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a 550-watt electric heater element into a fuse block wired in series with the motor. You can use the same idea to take some of the fight out of a one-quarter horsepower motor of the repulsion-induction type, for example, for otherwise you may get into more of a tussle than you are looking for.

Repulsion-induction motors employ commutators and brushes for starting, of course, and this test will show up a bad spot in a commutator. With a brush over the bad spot as you turn the motor shaft, there may be sparking and burning. The commutator may need cleaing with a solvent, polishing, careful sandpapering with the motor running, under-cutting of the mica, or turning on a lathe if it is old and in very poor condition.

Certain split phase motors and capacitor-start motors have centrifugal switches, supposed to be closed when the motors are idle and open when the motors are running, which develop dead spots when revolving contact rings or discs become dirty or worn, or when poor contact is caused by uncertain spring action. These motors may have full starting torque for 99 out of 100 starts, but for the next start they may lie dead, just humming or be too feeble to budge their loads.

You can make this test, if you are careful, by holding back a blower wheel on the shaft of the motor you are checking, or belt-driven by the motor. This permits making check-ups in the field without removing from the equipment a motor used to drive an oil burner, for example, or a blower of a forced-circulation warm air furnace. The rule is *Be Careful*. If you're not, you may think you've gotten mixed up with a buzz saw.

New Firebox Saves Oil

Tearing out the remains of a crumbled, heavy-weight firebox, three years ago, and installing a firebox of modern light-weight refractory material, did not drop the oil consumption the way the dealer who made the improvement had promised it would. The oil consumption did drop—but by less than 10% which, to the owner's mind, was no saving in fuel to speak of.

By September, 1944, the dealer who had provided the new firebox had learned more about fuel-stretching. He then

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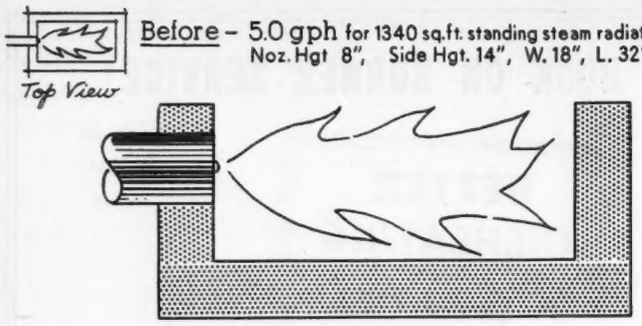

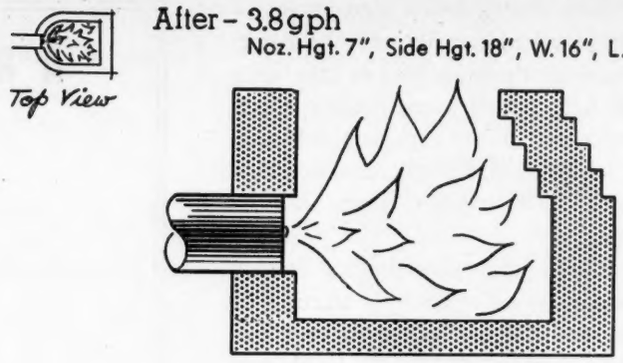

made the following changes to this installation.

1. He ripped out the firebox which is labelled "Before" in the accompanying diagram, and installed another lightweight firebox of the design shown as "After."

2. He installed new air-handling parts at the end of the gun of the pressure burner, to arrive at a compact, turbulent, high-temperature flame which would crowd the new firebox full of burning oil without inviting impingement of oil particles on the refractory surfaces. Also, he installed a new nozzle which would give 3.8 gph at unusually high atomizing pressure. To keep the nozzle clean while it used the wartime oils, he installed an additional strainer in the oil burner suction line.

3. He located and sealed gas leaks in the boiler which formerly permitted red-hot gases to take short-cuts from the firebox to the smoke outlet instead of travelling the entire length of the flue passages.

4. He replaced the flue doors of the boiler, which fitted badly, and he located and sealed air leaks around the boiler ash-pit and between the boiler sections. He installed special high temperature insulating material between the flue and firing doors and their liner plates to reduce heat loss by keeping these doors cool, and to make sure that the fierce heat given by the improved firing methods would not warp the doors and create air leaks.

5. To improve the distribution of steam in the one-pipe heating plant, he installed 18 new radiator vent-valves, tuned all the radiator vent-valves properly, and fitted the steam mains with four additional, highly-effective quick-vents.

The dealer knew that no additional steps to save oil could be applied effectively on this installation, for during his survey he discarded as not worthwhile for this job about 25 additional ideas which he often uses in his efforts to cut oil bills.

To hear the oilburner owner tell of it, the switch from the "Before" to the

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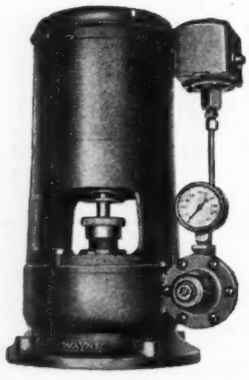

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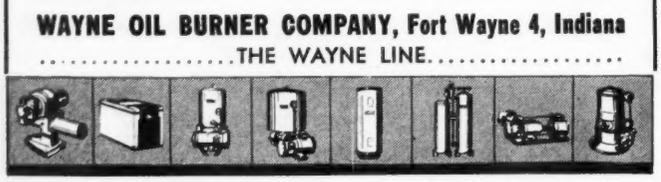

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the successful operation of Vaporizing Oil Burning Appliances has always occupied much of the engineering thinking at "A-P". As a result, manufacturers of this equipment have acquired the habit of coming to "A-P" with all their control problems. This has created an impressive list of "firsts" in the industry that have constantly offered the dealer *greater profit opportunities.*

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Completely revolutionizing the automatic control of oil-burning water heaters, floor furnaces and furnaces, this new "A-P" MAGIC PILOT maintains a constant pilot flame indefinitely by automatically controlling the oil flow required by the low-burning pilot. The oil flow orifice prevents clogging and oil waxing.

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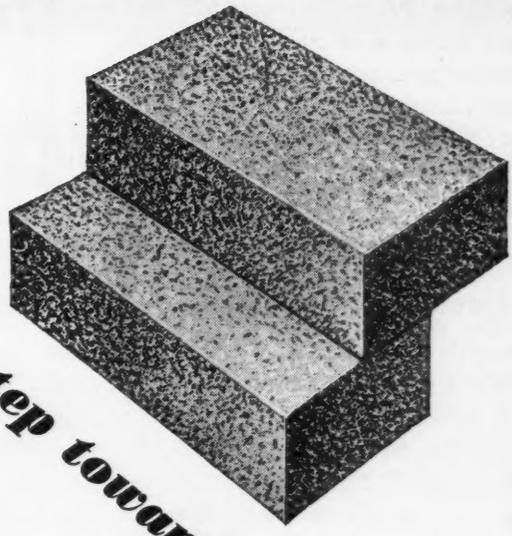

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Customer satisfaction

When you line the firebox of a customer's oil-fired heating furnace with B&W Insulating Firebrick, you assure him of satisfactory heating performance—less smoke and smell, faster response to thermostat demands, and minimized burner-tip carbonization and furnace roar.

This is because the light-weight, low heat-loss properties of B&W IFB permit the firebox to reach efficient combustion temperatures quickly—in a small fraction of the time required when ordinary firebrick are used. Therefore, the "cold furnace ills," described above are eliminated. Moreover, because B&W IFB come to temperature *on the surface* quickly, but absorb very little heat, furnace heat losses are minimized, and substantial savings in fuel can often be realized.

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BABCOCK & WILCOX

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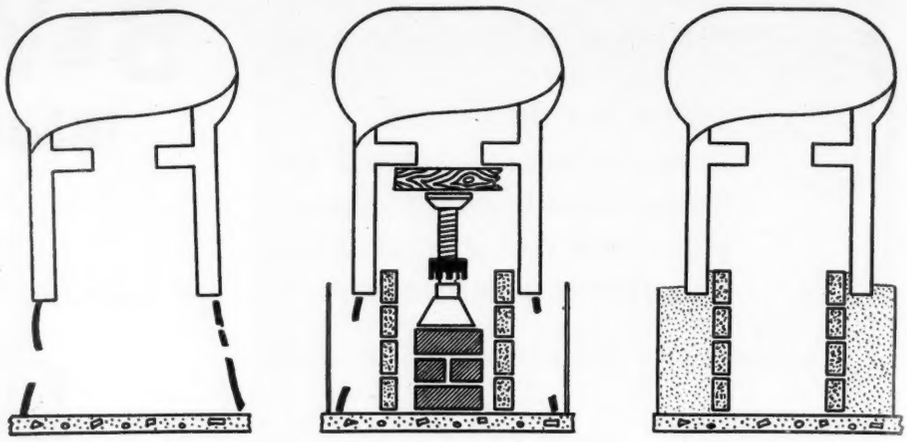
"After" firebox is responsible for the oil consumption being 3,600 gallons last heating season, instead of the 5,850 gallons burned the winter before and with more complaints from the occupants of the building. When the owner tells how the new firebox saves oil, the dealer nods his head in agreement, and at the first opportunity conscientiously tucks in the remark: "Remember, though, I did a few other things in addition, and they helped a little, too."



Boiler Base Broken — Jack and Form in Place — Concrete Poured

Firebox Complications

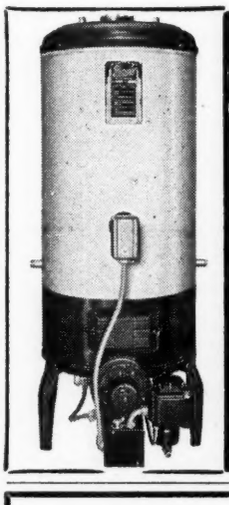
"Boss, the boiler base is crumbling and the boiler's going to crash down!"

This message came to a dealer one noontime last December. Earlier, he had layed out a job of firebox replacement for his two installation mechanics. The old firebox had been soaked with water in a wet basement for a year while the house was not occupied, and it fell to pieces when the burner again was started. Smoke and soot seeping through cracks in the 35-year-old boiler, and waste of his oil ration, made the owner want a new firebox right away. "A routine job," said the dealer when he ordered his men to clean out the old firebrick and back-fill and build a good firebox. But the news item he got over the telephone later, about the boiler threatening to crash down, made him dash out to the job to handle the complications.

Arriving on the job, the dealer found his men were right; the boiler base was broken because the basement dampness had turned most of it to spongy layers of rust. With the debris of the old firebox removed, the boiler was leaning like the tower of Pisa. Steam pipes were its main support, and every five minutes they sagged to a lower position.

Getting a new boiler base in less than a month was out of the question, the dealer found. He had to use his wits because the family upstairs was confidently waiting for heat to go on again.

A jack was speedily placed in the middle of the boiler to keep it from falling altogether. Standing on a column of brick, the jack pushed upwards on wooden



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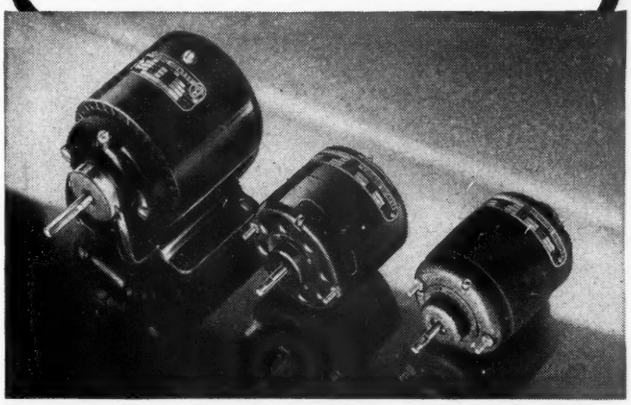

WHEN YOU have application problems involving small motors get in touch with the Redmond specialists. Here are engineers with years of experience and full equipment to provide proper analysis and advice on the use of small motors.

Illustrated above are, left to right: totally enclosed Type "T" A.C. Micromotor, built in sizes up to 1/25th hp; the Type "L" A.C. Micromotor, in sizes up to 1/40th hp; and the D.C. Micromotor, built in sizes up to 1/20th hp.

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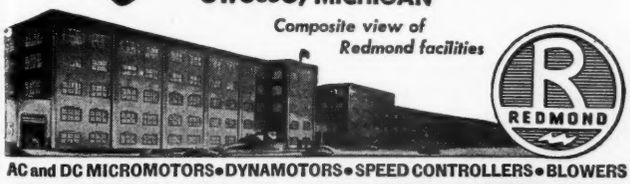

Composite view of Redmond facilities

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4: Your local Price & BTU differential between light oils and No. 5 assure you savings in advance—figure the savings yourself—it will amaze you!

Two Post War Models Available Now

MODEL JR: CAPACITY 1 TO 5 GALS./HR—¼ H.P. MOTOR
MODEL D4: CAPACITY 3 TO 12 GALS./HR.—½ H.P. MOTOR

Get full details about these fully automatic, all electric, self-lubricating, self-contained oil burners, for No. 5 Heavy Fuel Oil, with many new patented exclusive features.

Many Good Territories Open . . .

C. L. RAYFIELD CO.
2010-18 S. Halsted St., Chicago 8, Ill.

blocks that reached across the crownsheet of the boiler. Cautious jacking-up an additional inch or two placed the boiler back in the vertical position.

The mechanics then kicked away the remaining deteriorated parts of the boiler base—and this left mainly the front part standing, to which the ashpit door once was fastened—and built a combustion chamber of insulating firebrick. The side walls extended five inches above the bottom of the firebox section of the round boiler.

Sheet metal, extending four inches higher than the boiler base had been high, was secured around the combustion chamber, in a three-quarter circle open at the front, and four inches outside the boiler firebox casting at all other points. The front of this sheet metal form joined with what was left of the front of the old ashpit. This form was made good looking enough to stay on the boiler to give freedom from air leaks around the firebox. Two thicknesses of tarpaper were wrapped around the outside of the newly built firebox, to keep water from seeping into the light-weight firebrick. Then concrete was poured to fill the space between the firebox walls and the sheet metal form. After the concrete had hardened, the jack was removed and the firebox floor laid. The burner, in the meantime reconditioned and refinished in the dealer's shop, was installed and fired lightly for a few days out of consideration for the concrete base.

The owner of the house has been told to buy a new boiler as soon as possible, but he shows pleasure over his present low oil consumption. Actually, this should be accounted to the new firebox, reconditioning of the burner, and complete modernization of the job, but the owner insists it results from the outside of the boiler base now staying "cool as a tin roof in January," even when the firebrick are at glistening cherry-red heat.

◈

HARBISON-WALKER REFRACTORIES CO., Pittsburgh, has issued a booklet on "Five Insulating Brick of Prime Importance to Refractories Users." These are the H-W 16, 20, 23, 26, and 28 bricks principally used in industrial work. The number represent the maximum temperature limit in hundreds of degrees Fahrenheit.

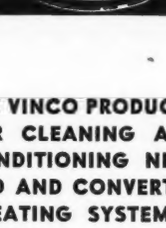
W. H. Henry, formerly in charge of the Motor Div. for General Electric, has been named assistant manager of the Industrial Divisions in charge of the motor business. *A. W. Bartling,* has become manager of the fractional-horsepower motor division, and *E. A. Green* has returned to the motor organization as general assistant to Mr. Henry.

J. C. Fitts, secretary of the Heating, Piping and Air Conditioning Contractors National Association, was elected commander of the Department of New Jersey of the American Legion at the 27th Annual Convention.

Albert E. Baak, for 12 years a research and development engineer for Minneapolis-Honeywell, has been named executive director of the controls division of the Paul Henry Co., Los Angeles.

L. Howard Goldbright, vice-president and treasurer of the Heating & Plumbing Finance Corp., a subsidiary of the American Radiator and Standard Sanitary Corp., died at his home in White Plains, N. Y., on September 1.

USE VINCO PRODUCTS FOR CLEANING AND CONDITIONING NEW, OLD AND CONVERTED HEATING SYSTEMS.



Still the choice of leading boiler manufacturers and heating men after 20 years' nationwide service.

For sale by all wholesalers of plumbing and heating supplies. *Ask For Folder "K."*

THE VINCO CO., Inc.

305 E. 45 Street, New York 17, N. Y.

Rajah

HAND CRIMPING TOOL

IT CUTS AND STRIPS AND ALSO CRIMPS

Rajah Terminals to ignition cable without the use of solder or any other tools

The RAJAH COMPANY
Bloomfield, N. J

WATCH FOR Gillen's announcement of their new improved line of Automatic Water Heaters and Furnaces

GILLEN

Automatic

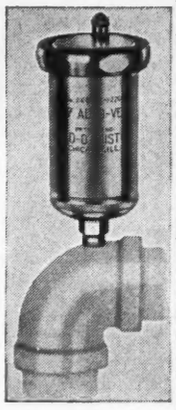
FURNACES and WATER HEATERS

J. L. GILLEN & Co.

DOWAGIAC MICHIGAN

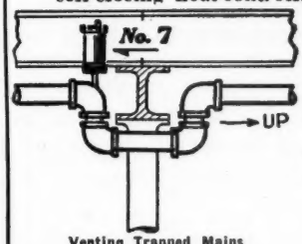
And Keep It Out With

AUTO-VENT AIR ELIMINATORS



CIRCULATION TROUBLES?

Don't fight air pockets or traps in hot or cold circulating lines! "Get that air out of there" *and keep it out* simply by installing the No. 7 Maid-O'-Mist Automatic Air Vent. This reliable air vent has a self-closing float-controlled valve and is designed especially for circulating pipe lines, convector radiators, unit heaters, cooling manifolds, tanks, diesel engines, or any other application where air pockets or traps retard the free circulation of liquids. For pressures up to 75 lbs. Bright brass finish.



Venting Trapped Mains and Circulating Lines

PLAY SAFE—USE THEM ON EVERY JOB.

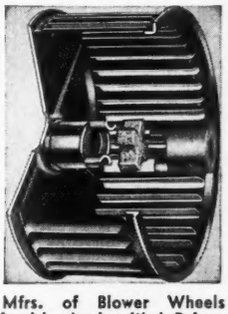
MAID-O'-MIST INC.

AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS

3221 NORTH PULASKI ROAD
CHICAGO 41 ILLINOIS

L-R FLEXIBLE COUPLINGS

If you need'em Right Now!



Mfrs. of Blower Wheels furnish wheels with L-R jaws integral with hub.

Type "A" Uniflex Pat. & Pat. Pend.

Call on Lovejoy for IMMEDIATE DELIVERY

Any quantity from stock. All sizes. Two and 3-piece. Specially designed for these services.

Type "UX" Double-flex Pat. & Pat. Pend.

Couplings for OIL BURNERS AIR CONDITIONING, Etc.

Correct for misalignment, take up shock and vibration. Protect installation. Extremely quiet. Non-lubricated. Wire or write for details and prices.

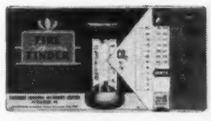
LOVEJOY FLEXIBLE COUPLING CO.
5012 W. Lake St., Chicago 44, Ill.

Right before your eyes!

Combustion Check-up

DRAFT GAUGE

STACK THERMOMETER



FIRE EFFICIENCY FINDER

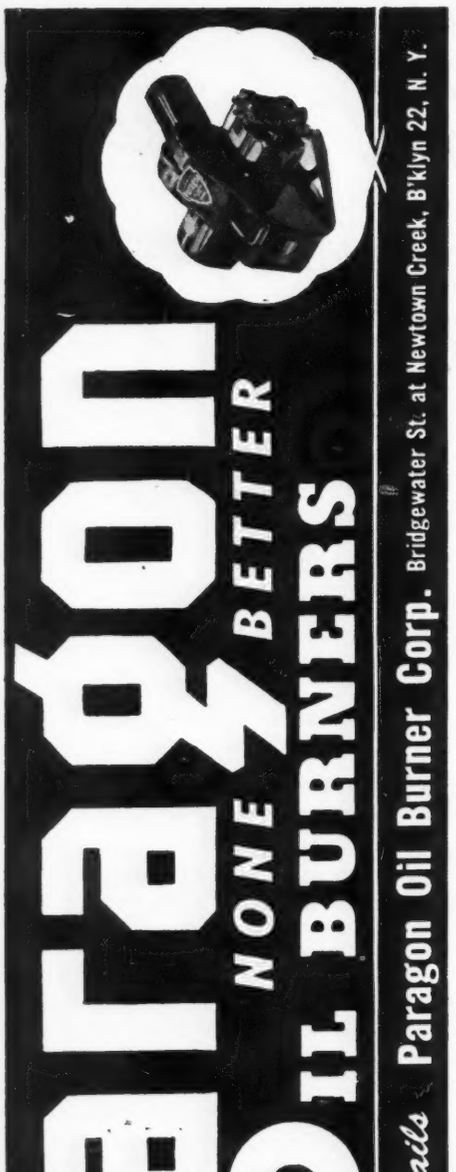
The FYRITE Combustion Test Set gives you everything you need to detect furnace conditions that waste fuel. The FYRITE CO_2 Indicator quickly shows whether the fuel receives the proper amount of air. The Stack Thermometer test shows how well the furnace absorbs the heat of the fuel burned. The unique Fire Efficiency Finder correlates CO_2 and stack temperature readings to show at a glance loss due to heat carried away in the flue gases. The DRAFT-RITE Gauge is indispensable for properly adjusting the draft.

These instruments are designed especially for the heating man's service kit. They are easy to operate, sturdy, durable, lastingly accurate. Use them now—to point the way to necessary repairs and adjustments that secure efficient fuel utilization... and to build an ever-widening reputation for reliable, expert service.

HEATING SERVICE DIVISION

BACHARACH INDUSTRIAL INSTRUMENT CO.

7000 BENNETT STREET • PITTSBURGH 8, PA.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NONE BETTER
OIL BURNERS
Write for Details Paragon Oil Burner Corp. Bridgewater St. at Newtown Creek, B'klyn 22, N. Y.
ACTION that SPEAKS LOUDER than WORDS
1ST in N.Y.C. SALES
PUT PARAGON SELLING ACTION TO WORK FOR YOU

New Products

Rystrom Has Pump Unit

RYSTROM ENG. CO., Rockford, Ill., announces its new Model R-12 fuel pump unit for pressure atomizing burners.

This new unit is smaller in size than those now on the market, but has standard mountings and is interchangeable

with existing makes. It pumps 14 GPH at a pressure of 100 lbs. per sq. in. The capacity based on the strainer size is 3.5 GPH and the weight 6¾ lbs.

The pump was especially designed, according to C. H. Rystrom, president, to take advantage of the latest improvements in war developed machines and processes. One result is a new high degree of operating quietness. Other features are low power consumption, uniform performance and quick cut-off.

All operating mechanism is accessible and removable. A Phillips screw driver is all that is necessary to take out and examine any of the parts.

◈

Has New Furnace Line

RADIATION FURNACE Corp., Benton Harbor, Mich., has put three new furnace models on the market, designed especially for oil firing. The units are all steel construction ranging from 110,000 to 185,000 Btu capacity at the bonnet. The jacket totally encloses the unit and burner, and ample clean-out facilities have been provided.

Units are provided with double circular radiators around the top of the primary heating surface, through which all products of combustion must pass on the way to the stack. This is claimed to give exceptionally low stack temperatures.

Blower capacities range from 1,000 to 2,400 cfm. Combustion chamber diameters on the three sizes are 16, 18, and 24 inches.

◈

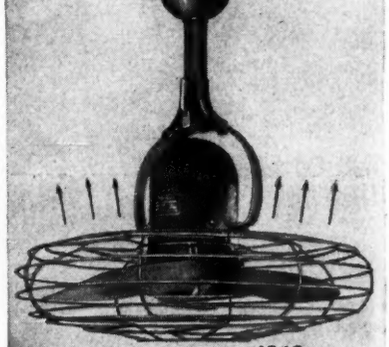
Has Diaphragm Cloth

IRVINGTON VARNISH & Insulation Co., Irvington, N. J., has announced a specially processed cotton cloth, designed for diaphragm use such as in fuel pumps. The new product is said to have excellent bursting and tearing strengths; remains flexible and offers almost instantaneous recovery over a wide range of operating temperatures.

◈

Fan Is Designed To Circulate Heat

REYNOLDS ELECTRIC Co., Chicago 12, has announced the Reco Heat Circulating fan for use in hard-to-heat rooms. Furnished in ceiling, table and high pedestal models, the fan moves air upward toward the



ceiling, from which it passes outward and is moved down the walls. Use of the Reco fans is claimed to eliminate stratification of heat, smoke, and odors in a room, and equalize temperatures between the floor and ceiling.

Other advantages claimed include no streaking of walls over radiators, due to

a Check List of Oilheating Information

1941-1942 SPECIFICATIONS BOOK OF OIL BURNERS AND FUELOIL

Gives specifications for 2200 models and makes of burners by 237 manufacturers. Gives grade of oil officially specified for each burner, method of atomization, air source, ignition data, oil feed, gph rating and motor size **50c**
(Bulk purchase prices on request.)

"Selling and Handling Fueloil." A 32 page booklet covers fueloil distribution from bulk plant to customer's tank. Covers planning and operating bulk plants, operating tank trucks, selling fueloil, specifications and variables, automatic deliveries, etc. **50c**

"Oilburner Combustion Chambers." Complete and concise study, illustrated with charts, illustrations and reference tables. Text covers both precast and those built on-the-job. 23 pages **50c**

"Degree Day Handbook." Useful for computing oil consumption by the degree day method **$3.00**

REDUCING FUEL OIL BILLS

This booklet will help you show homeowners. in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit with the right kind of service **50c**

"Oilburner Combustion Chambers." Complete and concise study, illustrated with charts, illustrations and reference tables. Text covers both precast and those built on-the-job. 23 pages **50c**

"Short Cuts to Heat Loss Data." When you're figuring heat loss you can save time by using this accurate, easy method getting fast results without lengthy figuring..**25c**

KNOWING THE A TO Z OF CO_2

This invaluable booklet shows you how you can test your customers' burners by modern methods obtaining a high CO_2 rating and a low stack temperature. Be efficient and use this up-to-date booklet in your service work **$1.00**

SERVICE ON ALL TYPES OF OIL BURNERS

This book is essential in your repair and service work. Gives 10 detailed analyses of the most common basic service problems and shows you how to solve them efficiently **50c**

Oil Burners, by Kalman Steiner, includes discussion of fundamental and advanced engineering and methods of oilburner design, construction, installation, operation and maintenance. Covers the characteristics, specifications, combustion, handling, and applications of fueloil. 436 p., many tables, charts, pictures .....**$4.50 each**

"Short Cuts to Heat Loss Data." When you're figuring heat loss you can save time by using this accurate, easy method getting fast results without lengthy figuring **25c**

"Comparative Heating Costs With Oil, Gas, or Coal." Information on how to forecast oil consumption, based on an analysis of over 1300 installations **25c**

"Showdown; Oil vs. Gas Cost." Here in a 4-page booklet is the unbiased story of just what a group of bill-weary consumers found out about gas heating costs, and why many of them have switched to oil .....**Price 25c**

"Installation Cost Sheets." Form for keeping an accurate record of the costs on each installation. Helps protect profits by showing exactly how much the installation expense is on each job. Size 8 x 21½ folded twice to fit 8½ x 11 binder . . . 100 sheets **$8.25**; 200—**$9.15**; 300—**$10.00**; 500—**$11.85.**

"Operating the Automatic Delivery System." Operation and refinements of a simple card system which tells to the day when a customer needs oil. Based on degree days. Organizes work of men and trucks .....**50c each**

"Catalogue of Oilburner Manufacturers, 1942." Companies classified by the type of burners they make. Covers domestic and industrial burners, oilfired water heaters, boiler-burner units, airconditioners, range burners, space heaters. Names of principal officials, mail address and year established. 21 pages .....**Price $2.00**

"Oilfired Heating and Air Conditioning." Outlines the basic principles of gravity and forced circulation hot water heating systems; three types of steam heating systems; gravity and forced circulation warm air heating systems. Gives minimum pipe and duct sizes for each and outlines the changes necessary to adapt to oilfiring **$1.00 each.**

"BETTER OILHEATING"

Nearly 100 text pages and 125 illustrations besides many tables and charts and short service hints. Bound in heavy paper. 8½" x 11". Covers trouble-shooting, field repair and efficiency testing to save oil. Valuable book for individual study or supplementary text for service schools. For all dealers, service and installation men. Many topics cover: fireboxes, draft, wiring, motors, controls, nozzles, pumps, baffles, efficiency, heating, etc. **$2.00**

Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or checks be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.

FUELOIL & OIL HEAT • 232 MADISON AVENUE NEW YORK CITY 16, N. Y.

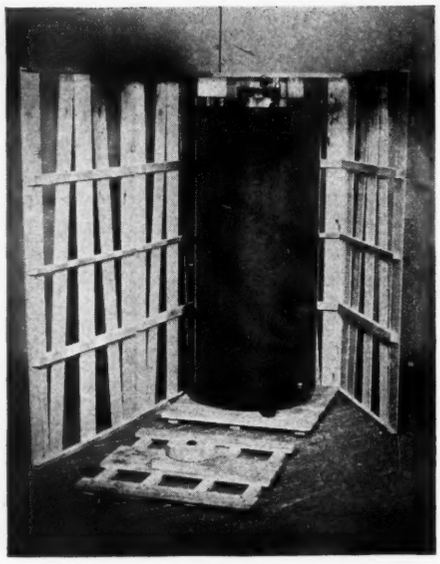
reversing the air flow over the heating surfaces. This is accomplished without drafts, since a large volume of air is moved at low velocity down the walls.

Reco heat circulator fans now are made in 20 in. and 24 in. diameter sizes, and soon will be available in 12 in. and 16 in. models for smaller rooms. Provision for adjustment makes possible changing the direction of air flow to a variety of angles.

Wirebound Crates Save Weight On Boiler Shipment

GENERAL WIREBOUND CRATE used for shipping oil furnace boilers overseas, saved 61 pounds per unit. This Wirebound Crate, designed to fit the product provided ample protection for the boilers as well as saving handling time in loading and unloading.

In order to furnish sufficient strength to protect these 350-pound boilers, 3 rows of intermediate cleats were used. Also, a circular disc was cut to fit directly in the flue at the top of the boiler in order to steady it during transit. In this



manner, added strength was given the crate so that it was able to protect the boiler through the rough overseas trip.

Designed and manufactured by the General Box Co., Chicago, these wirebound crates bring savings in shipping weight and packing time. They reach users in unit-like construction and are rapidly and easily assembled. Wirebound crates are stored in flat "mat" form to save storage space.

"Low Swing" Strainer

SEVERAL IMPROVEMENTS over existing equipment are claimed for a new Blackmer strainer recently announced by Blackmer Pump Co., Grand Rapids, Mich.

Developed by Blackmer engineers as a wartime protective and conservation measure for critical pumping equipment, the new Low-Swing strainer has been added to the company's line of *Ezy-Kleen* strainers.

Use of perforated metal, steel or bronze, instead of wire screen for the strainer basket makes the basket less liable to damage in cleaning and gives it longer life.

Slotted lugs of the top plate line up with the lugs of the strainer body to receive the four holding bolts, permitting quicker removal of basket for cleaning.

Compact design permits mounting in small space or in lines along walls.

Strainer is designed for flange mounting. Companion flanges are included as a part of the unit.

Present production is limited to a capacity of 100 GPM with 2-in., 2½-in.,

DELIVERIES ??

Fig. F-80

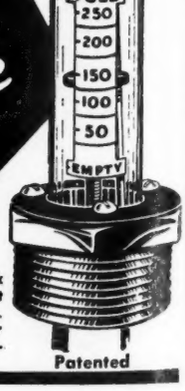
Sorry, but prompt deliveries can only be offered on orders for just one or two nozzles for emergency needs. During the War few civilian requirements could be filled but demand continued so great that we still have a large unfilled order backlog.

Even though production is far above prewar levels, it will be some time before deliveries return to normal.

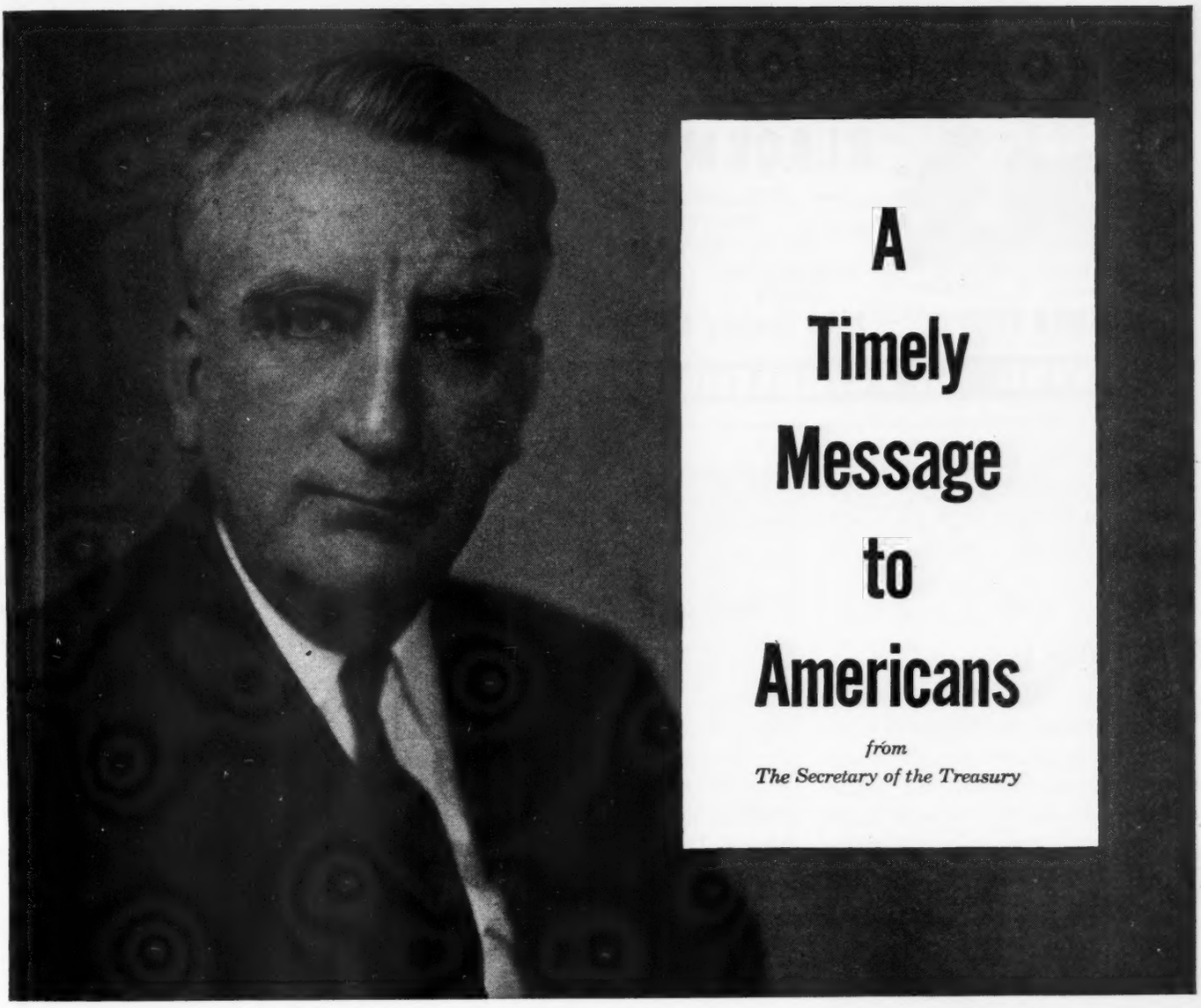
MONARCH MFG. WORKS, INC.
E. WESTMORELAND & SALMON STS., PHILADELPHIA 34, PA.

HELP US
and yourself
ORDER YOUR WATER LEVEL PROTECTION REQUIREMENTS EARLY.
NEWARK CONTROLS
BLOOMFIELD NEW JERSEY

Adjustable FUEL-OIL GAUGES by Mel-Gauge COMPANY
EAST HAVEN, CONNECTICUT



Easy, accurate tank content readings at no increase in cost. Write for folder or distributor agreements.
Patented



A Timely Message to Americans

from
The Secretary of the Treasury

America has much to be thankful for.

Abroad we have overcome enemies whose strength not long ago sent a shudder of fear throughout the world.

At home we have checked an enemy that would have impaired our economy and our American way of life. That enemy was inflation—runaway prices.

The credit for this achievement, like the credit for military victory, belongs to the people.

You—the individual American citizen—have kept our economy strong in the face of the greatest inflationary threat this nation ever faced.

You did it by simple, everyday acts of good citizenship.

You put, on the average, nearly one-fourth of your income into War Bonds and other savings. The 85,000,000 owners of War Bonds not only helped pay the costs of war, but also contributed greatly to a stable, prosperous postwar nation.

You, the individual American citizen, also helped by cooperation with rationing, price and wage controls, by exercising restraint in your buying and by accepting high wartime taxes.

All those things relieved the pressure on prices.

THE TASK AHEAD

We now set our faces toward this future: a prosperous, stable postwar America—an America with jobs and an opportunity for all.

To achieve this we must steer a firm course between an inflationary price rise such as followed World War I and a deflation that might mean prolonged unemployment. Prices rose more sharply after the last war than they did during the conflict and paved the way for the depression that followed—a depression which meant unemployment, business failures and farm foreclosures for many.

Today *you* can help steer our course toward a prosperous America:

—by buying all the Victory Bonds you can afford *and by holding on to the War Bonds you now have*

—by cooperating with such price, rationing and other controls as may be necessary for a while longer

—by continuing to exercise patience and good sense with high faith in our future.

The challenge to America of switching from war to peace with a minimum of clashing gears is a big one.

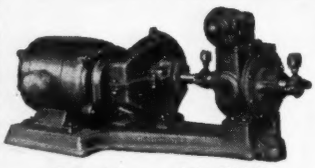
But it is a small one compared to the tasks this nation has accomplished since Sunday, December 7, 1941.

Fred M. Vinson
Secretary of the Treasury

A Government message prepared by the War Advertising Council and contributed by this magazine in cooperation with the Magazine Publishers of America.

fueloil & oil heat

PUMPS for the PETROLEUM INDUSTRY



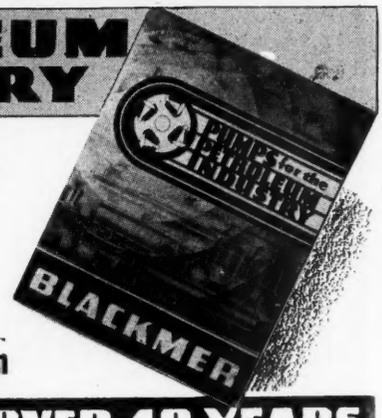
BLACKMER ROTARIES

— are self-adjusting for wear —

WRITE for Bulletin 102—
Pumps for the Petroleum Industry

Capacities to 750 GPM.
Pressures to 500 psi.

BULK STATION PUMPS | TRUCK PUMPS | HAND PUMPS



BLACKMER PUMP CO. — 2170 Century Ave. — Grand Rapids, Michigan

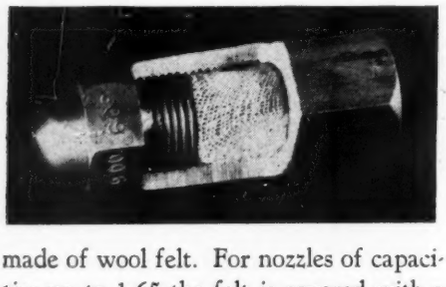
SERVING THE PETROLEUM INDUSTRY FOR OVER 40 YEARS

and 3-in., intake and discharge sizes. Maximum operating temperature is 600° F. Maximum pressure is 75 psi. Larger and smaller sizes will eventually be added to the line.

◈

Fabric Filter for Nozzle Protection

A FABRIC TYPE FILTER designed to be installed in the nozzle body on high pressure burners has been announced by F. J. Martin, Bradley Beach, N. J. The filters are



made of wool felt. For nozzles of capacities up to 1.65 the felt is covered with a gauze, and for larger sizes the felt has a light cotton coating.

Filters are made slightly larger than the nozzle body opening so that it will press against the sides and prevent by-passing of oil. Installation can be made with a pair of long nose pliers, according to the manufacturer.

◈

Will Make Water Heaters

PRESTO WATER HEATER Mfg. Co., Hartford 3, Conn., has developed two types of water heaters that soon will be put on the market, according to M. J. Dubin, president. Mr. Dubin formerly was a retail oilheating dealer in Hartford, but has entered the manufacturing business with his son, Fred, soon to be released from the Navy.

One type of heater, fired by a shell type range burner, will be offered in the low price range. The other is a completely self-contained unit using a pressure type burner firing at about 1 gph., and a 40-gal. storage tank. A feature will be the ease with which the tank can be replaced if necessary. The unit will be completely wired and ready to "plug-in" at the factory.

The company also plans to manufacture a line of cooking ranges fired with oil.

New Test Lamp

AMERLINE, Chicago 22, has put a new all-purpose circuit tester on the market. It is vest-pocket type and indicates voltages from 90 DC and 60 AC to 500 volts

AC or DC. A G-E neon lamp glows in varying intensities to indicate circuit conditions. The lamp lights on currents as low as one microampere.

◈

Announces Tank Heater

REMPE CO., Chicago 12, has announced a new bulk tank preheater with many new features claimed for the unit. It consists of 38 sq. ft. of direct coil surface, plus 10 sq. ft. of shell surface, which can be warmed by either steam or hot water. The

HAYWARD OIL BURNERS

ROTARY and PRESSURE ATOMIZING TYPES

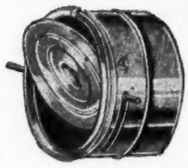
Dealer and Distributor
Inquiries Invited.

HAYWARD MFG. CO., INC.

505 COURT STREET — BROOKLYN 31, N. Y.

PREFERRED

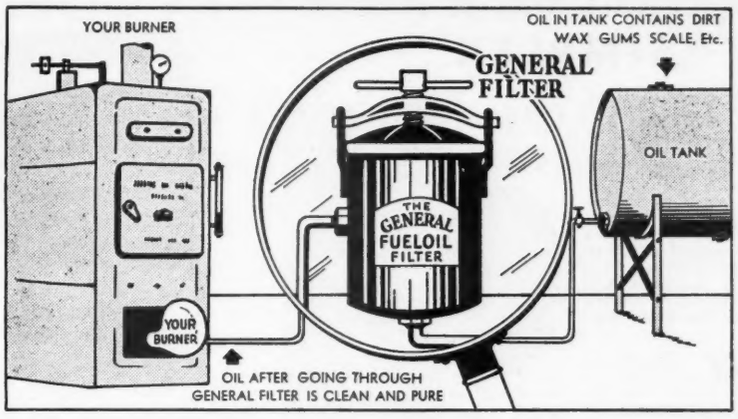
DRAFT-A-JUSTOR



The Original. Still the Best. Hundreds of Thousands in Use. • Holds the draft constant in the fire box. • Scientific draft control for the smallest to the largest jobs. • Stove, domestic, and commercial sizes from 4" to 24" in diameter. • Industrial sizes from 24" x 24" to 5' x 12'.

Write for literature and trade price

PREFERRED UTILITIES Mfg. Corp.
1860 Broadway, New York 23, N. Y. Boston Office: 839 Beacon St.



GENERAL
FUEL OIL FILTERS

No oil burner installation complete without a General Filter.

Dealers and Jobbers—General line is fast moving.

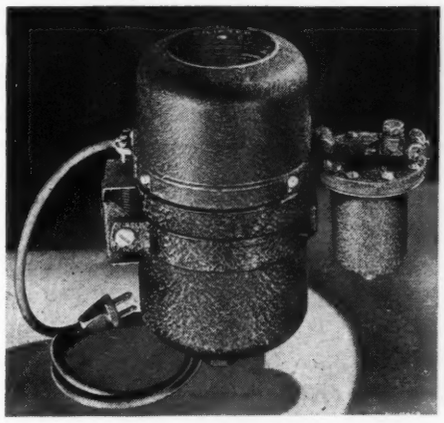
Substantial Profits.

Both Filters Listed Under Reexamination Service of Underwriters' Lab.

General Filters, Inc. **Detroit 27, Mich.**

preheater can be made to fit any size tank having a manhole 16½ ins. or larger.

The flow accumulator is a feature that makes it necessary for liquids leaving the tank to flow over the coils before entering the suction lines. Coils are 1½ in. standard steel pipe, and shell is 12 gauge sheet steel of 16 in. O.D. The accumulator is steel construction bolted in place. The unit is tested with 400 lbs. air pressure under water.



"Oilifter" for Pot Burners

AUTOMATIC PRODUCTS CO., Milwaukee, has announced a new automatic pump for feeding vaporizing type burners from remote storage under the trade name "Oilifter." The unit is claimed to lift oil effectively as high as three floors, and to be capable of a horizontal pull of as much as 100 ft. It eliminates the necessity for hand pumping out of remote storage to feed the space heater, water heater, or other vaporizing type burner.

All excess fuel in the reservoir chamber of the unit syphons back automatically into the inlet supply line, so there is no wastage of oil. Fuel is supplied to the burner automatically as needed.

Electric Pressure Gauge

UTILIZING THE PRINCIPLE that the electrical characteristics of a wire filament change with a physical strain, the Baldwin Locomotive Work's Southwark Division has developed a pressure sensitive device that promises to open whole new fields of measurement and control.

The new instrument, called the SR-4 Pressure Sensitive Device, is used to convert gas or liquid pressure to electrical energy for measuring, recording or controlling. Its accuracy, one-fourth of one percent of full scale having been consistently obtained, will mean that the device can be used for control operations that heretofore have not been possible. It is available in several ranges up to 0-to-20,000 pounds per square inch.

Since it is essentially an electronic device it will enable results to be transmitted long distances whether for direct reading, recording or control. Transmission even by radio is feasible. This eliminates leakage and clogging troubles in conventional capillary tubes used with other pressure sensitive instruments.

Flex. Drive for Truck Pumps

FLEXIBLE SHAFTS for driving truck pumps and hose reels has been announced by Stow Mfg Co., Binghamton, N. Y. It is claimed that this drive makes it possible to mount the pump, meter and reel together at the side or at the back of the

* *A complete line of 100% prefabricated automatic gas or oil-fired domestic heating equipment.*

- Winter Air Conditioners
- Split System Units
- Boiler Burner Units
- Penngun Water Heaters

PENN BOILER & BURNER Mfg. Corp.
Lancaster, Pennsylvania

OIL SOOT E-Z DESTROYER

WAR ON FUEL OIL WASTE

Simply spray E-Z, and the soot in fire chamber and flues vanishes instantly. Increases efficiency of oil. One trial will convince you. "EASY" TO USE . . . ECONOMICAL TOO!

Makes satisfied customers.

DISTRIBUTORS: ***Write for fine proposition.***

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Enclosed find check ( ) money order ( ) Send the following prepaid:

No. 1 pkg.....$1.00
No. 5 pkg..... 4.50

Name .....
Address .....
City..... State.....

IF BETTER DRAFT CONTROLS ARE EVER MADE THEY WILL STILL BE MADE BY

"SIMPLEX"

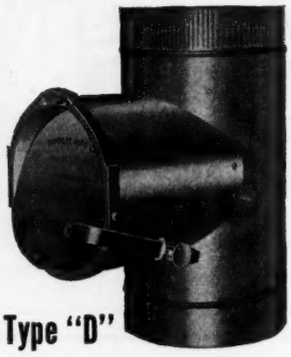
"Type H" Fuel Saver

Made in all sizes from 4" to 24" inclusive.
The frames of type "H" controls from 5" to 10" inclusive, are made of a new alloy, cast in our special molds, and the gates are made of galvanneal or black iron, cadmium plated.
All balancing members are cadmium plated, making practically a rust proof control.

5 in 1 SIM-TROL

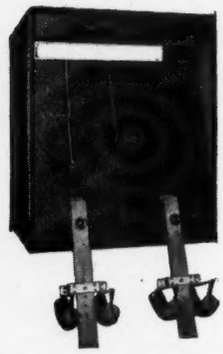
with Simplex Adjustable Sleeve

adjustable to breechings from 8" to 12" inclusive, which covers the range of most domestic heating plants.



Type "D"

Made for Oil and Gas Water Heaters, Stoves and Space Heaters.



Type "A" Industrial Control made for any size plant.

All Simplex Controls have outside balance members. With this system no soot or carbon can gather to throw the gate out of balance.

Made by SIMPLEX Manufacturing Co.
FOND DU LAC, WIS.

truck, and drive through the flexible shaft from the power take-off.

This makes possible mounting the pump and reel where it is most convenient to install and maintain them. The flexible shaft is said to minimize wear on pump packing and glands, and to compensate for relative movement between the pump and power take-off due to distortion of the chassis frame caused by uneven roads. Piping costs are kept to a minimum.

◈

Selector for Tubing Tools

A HANDY TUBE-WORKING tool selector is one of the features of new folder No. 347 on tubing tools recently published by The Imperial Brass Mfg. Co., Chicago 7. The tools are for use with copper, brass, aluminum, thin-wall steel and similar tubing.

Flaring tools, tube cutters, tube benders, coil makers, pinch-off tools, swedging tools, reamers, refacing tools and soldering equipment are all included. There are also a number of handy tool kits.

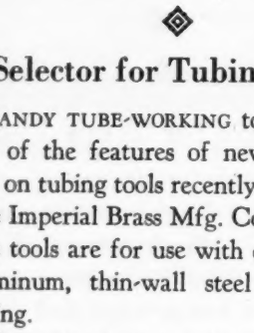
◈

Oilheating Trends

(*Continued from page* 11)

profit needs, only 43% of this Western group says it must have the 3 mills to equal 1941 profits. The difference between Eastern and Western findings on this last point is hard to reconcile, but there clearly is some difference in cost-to-income ratios between the two regions.

COOPERATIVE PROMOTION: In several localities oilheating dealers and fueloil distributors are working out joint efforts to do advertising and public relations work to benefit oilheating. In Westchester County, N. Y., some 40 dealers plan to start such work in the Spring with an initial spending of $2,500 in town papers. Philadelphia has been working out a $20,000 campaign to be shared by 50 companies, has it substantially financed and expects to go into action when burners start arriving from the factories in volume, which probably means a wait until spring to start. In St. Louis 12 companies are putting together $25,000 for a joint advertising campaign to start in the spring. Cooperative programs still in the exploratory stage are mentioned by reporting dealers in Newton, Mass., New Britain, Conn., Lincoln, Nebr., and Portland, Oregon. The Milwaukee group is again doing cooperative newspaper advertising telling readers that burners are coming, that they are back in production after the manufacturers devoted four years to war equipment, and that the convenience, cleanliness and low cost of oil heat will soon be available to the many families asking for it.



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Flush Type

Reg. $1.25 **70¢** ea.

Brass cap, galvanized iron body, leather gasket, iron wrench. Net weight, 2½ lbs. each. Freight prepaid on orders of 100 or more. On orders of 200 or more, free imprint of 8 letter name. Extra letters at slight extra cost.

Send for our catalog of oil handling equipment.

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Manufacturers of Rexoil Conversion Burners, Boiler Units, Furnace Units and Direct-Fired Conditioners

ORDER NOW

Rexoil Burners are being shipped as fast as possible . . . but the backlog is growing, so order soon. Remember, you're RIGHT with REXOIL . . . over 60,000 in use.

REXOIL

REIF-REXOIL, Inc.
35 Carroll St. Buffalo, N. Y.

FOR FAST AND EVEN HEATING USE

GORTON *Equalizing Valves for Radiators and Gorton Air Eliminators For Mains*

Gorton Valves are the quickest venting valves made with various sizes of air outlets properly designed for automatic heating.

SEND FOR LITERATURE AND PRICES

GORTON HEATING CORP., Cranford, New Jersey

Since 1887 Manufacturers of Heating Equipment

DEGREE DAY TABLES

ONE MONTH ONLY					LAST SEASON			
	September		Percent		(Sept. 1 to May 31)			Percent
Normal	1944	1945	Change*		Normal	1944	1945	Change*
116	127	111	— 4.3	Albany	6587	7122	6871	+ 4.3
12	4	0	...	Atlanta	2999	2880	2807	— 6.3
34	27	19	— 16.3	Baltimore	4509	4445	4296	— 5.0
98	90	71	— 27.6	Boston	5853	5986	5703	— 2.6
125	119	125	...	Buffalo	6805	6904	6675	— 1.9
84	77	128	+ 52.3	Chicago	6205	6381	6211	...
52	41	23	— 55.7	Cincinnati	4993	4927	4932	— 1.2
92	89	76	— 17.3	Cleveland	6094	6126	6050	— 0.7
5	0	18	+260.0	Dallas	2378	2436	2232	— 6.1
124	87	231	+ 86.6	Denver	5784	5815	5614	— 2.9
99	70	148	+ 47.4	Des Moines	6356	6406	6185	— 2.7
109	91	109	...	Detroit	6502	6561	6295	— 3.2
126	100	150	+ 19.0	Grand Rapids	6655	6654	6474	— 2.7
106	87	77	— 27.3	Hartford	6037	6284	6114	+ 1.3
288	268	379	+ 24.0	Helena	7600	7702	7777	+ 2.3
...	0	0	...	Houston	1333	1326	1163	—12.7
65	34	58	— 10.7	Indianapolis	5459	5383	5407	— 1.0
50	23	62	+ 24.0	Kansas City	4971	5218	4727	— 5.2
5	5	2	— 60.0	Los Angeles	1362	1408	1512	+11.0
34	16	12	— 64.7	Louisville	4421	4315	4342	— 1.8
120	116	170	+ 41.6	Milwaukee	6955	7081	6926	— 1.0
163	134	227	+ 39.3	Minneapolis	7898	7648	7563	— 4.1
...	0	0	...	New Orleans	1208	1234	1072	—11.3
51	35	33	— 35.2	New York	5270	5364	4952	— 6.0
81	62	116	+ 43.3	Omaha	6074	6384	5914	— 2.6
36	31	38	+ 5.5	Philadelphia	4732	4842	4844	+ 2.4
69	86	62	— 10.2	Pittsburgh	5427	5435	5631	+ 3.8
179	192	178	...	Portland, Me.	7128	7725	7375	+ 3.4
109	68	138	+ 26.6	Portland, Ore.	4214	3958	4043	— 4.1
104	61	77	— 22.6	Providence	5946	5783	5552	— 6.6
36	17	54	+ 50.0	St. Louis	4602	4717	4758	+ 3.8
95	67	211	+122.1	Salt Lake City	5568	6118	5568	...
122	149	101	— 17.1	San Francisco	2569	2454	3043	+18.4
281	281	354	+ 25.9	Sault Ste. Marie	8901	8732	8759	— 1.6
174	93	222	+ 27.6	Seattle	4560	4101	4144	— 9.1
98	103	92	— 6.2	Toledo	6202	6611	6485	+ 4.6
43	24	16	— 62.9	Washington	4582	4486	4257	— 7.1

*Compared with normal.

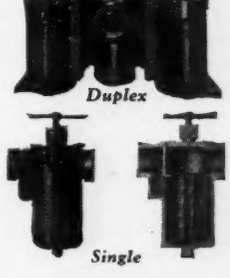
KRAISSL

FILTERS
STRAINERS
PUMPS

Keep Fuel Oil Lines Open and Active

Year-in, year-out performance proves the skill of KRAISSL engineering design and the honesty of KRAISSL manufacture.

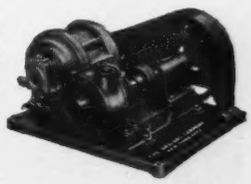
Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service — any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.



Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

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HACKENSACK, N. J.

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Save Fuel—Save Money. Barclay has complete stock fuel-saving devices—furnace regulator sets, temperature controls, draft regulators, insulating materials, filters, oil burner pumps. Write for our catalog of all installation accessories and replacement parts for oil burners and stokers. Robert Barclay, Inc., 130 N. Peoria St., Chicago, Ill.

FUEL OIL PRICE CHART complete with celluloid holder. Made for use by drivers or office personnel. Stop figuring over and over again. When ordering advise us retail fuel oil price in your town. Chart shows from 1 to 999 gallons and the amount in dollars and cents you should charge your customer. Price $1.00. Degree Day Systems, 5104—39th Ave., Woodside, N. Y.

AN ATTRACTIVE POSITION IS OPEN IN CLEVELAND, OHIO for a man capable of taking charge of our Ray Oil Burner installation and service department. The territory we serve comprises one of the largest and best diversified industrial areas in the United States. Our organization is growing rapidly and we believe this opening offers the right man a life-time position and an opportunity to get in on the ground floor. Give complete qualifications as to experience, education and age. No investment required. All replies strictly confidential. Address Box 484, c/o FUELOIL & OIL HEAT, 232 Madison Avenue, New York 16, N. Y.

ATTENTION: BOILER AND AIR-CONDITIONER MANUFACTURERS—OIL COMPANIES—OIL BURNER DISTRIBUTORS; Oil burners designed, developed and engineered to your specifications, Underwriters and Commercial Standard listing guaranteed, production set-up supervision, patterns, jigs, fixtures, service manual copy, etc., supplied when necessary. We specialize in pressure atomizing burners for the domestic field. Our laboratories, machine shop and engineering staff, located in the east are at your service. All replies will be held strictly confidential. Address Box 530, c/o FUELOIL & OIL HEAT, 232 Madison Avenue, New York 16, N. Y.

WANTED: Growing Tidewater Virginia Independent Fuel Oil Company, wants man for burner service department to assume full responsibility of all burner service, and eventually become service manager. Must be thoroughly experienced on horizontal rotary heavy oil burning equipment, as well as high pressure domestic burners. Do not apply unless you wish a permanent position with profit sharing possibilities, and are competent, sober and conscientious. Address Box 531, c/o FUELOIL & OIL HEAT, 232 Madison Avenue, New York 16, N. Y.

MANUFACTURERS ATTENTION: We are interested in securing a distributorship for Canadian territory of a complete line of Oil Burning Equipment, including conversion burners, boiler-burner units, etc.—Address Box 532, c/o FUELOIL & OIL HEAT, 232 Madison Avenue, New York 16, N. Y.

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BOSTON DISTRIBUTOR for nationally known oil burner has unusual opportunity for an outstanding man capable of assuming complete charge of installation and service department for commercial and industrial application of heavy oil. Will defray expenses to Boston for interview where satisfactory salary arrangements will be made. Address Box 534, c/o FUELOIL & OIL HEAT, 232 Madison Avenue, New York 16, N. Y.

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REPRESENTATIVE WANTED for a line of fuel conservation products; Sludge and water remover from fueloil, boiler water treatment, rust preventive and soot remover. Wholesale set-up comprises display, circulars, newspaper advertising mats. Our retail division is for bulk sales to buildings, institutions, factories, etc. We are one of the leaders in the field. Extremely attractive, commission. Box 535, c/o FUELOIL & OIL HEAT, 232 Madison Avenue, New York 16, N. Y.

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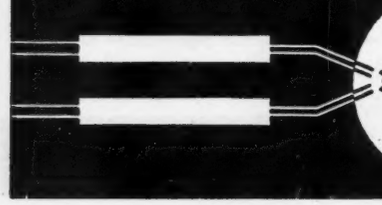

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